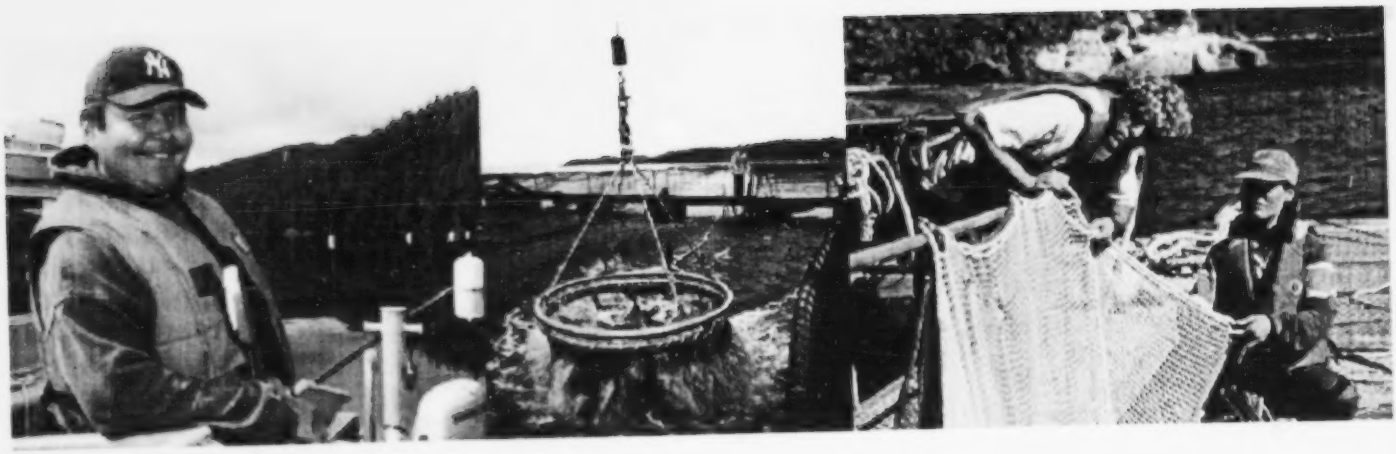
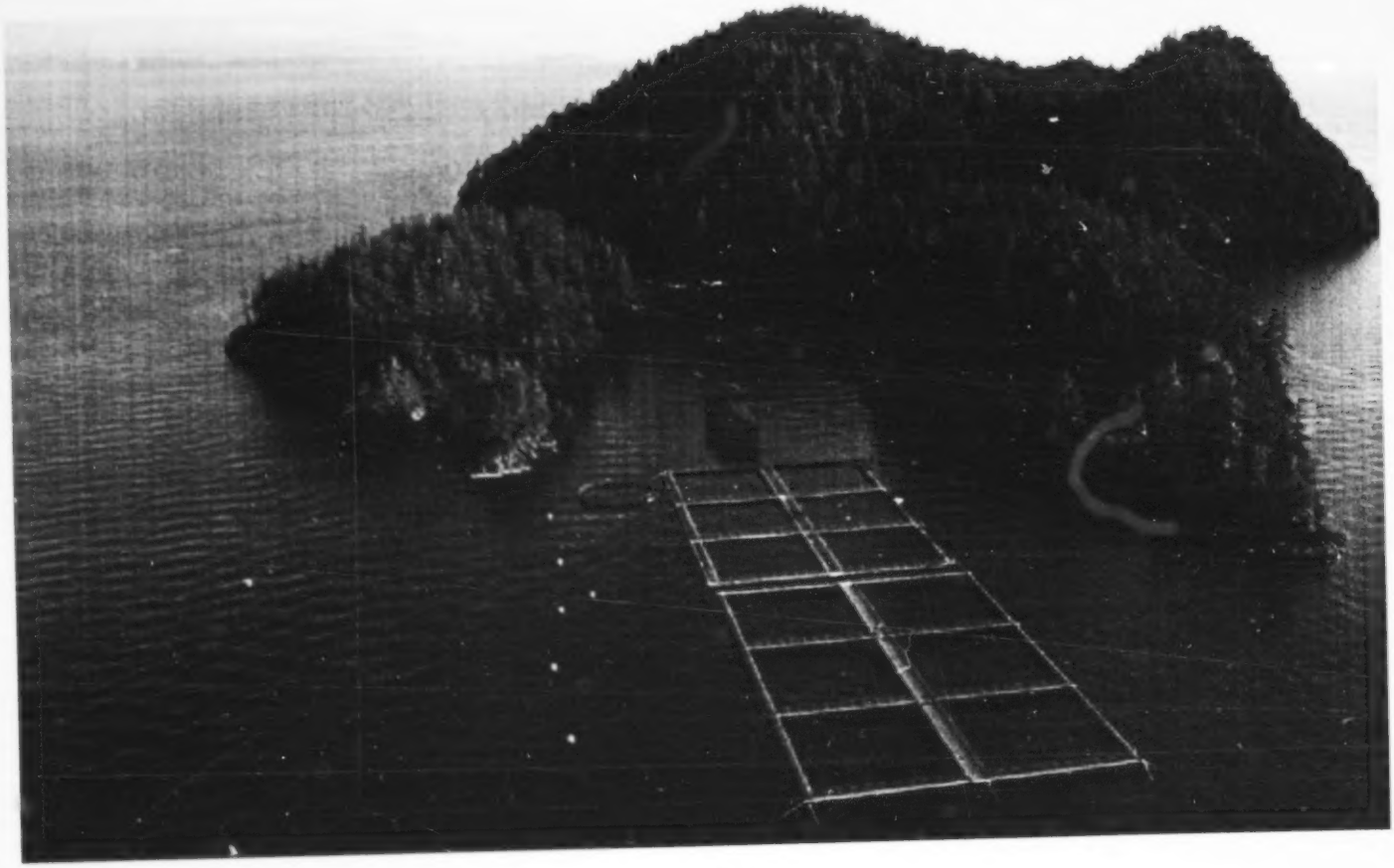


GUIDE TO INFORMATION REQUIREMENTS FOR **MARINE FINFISH AQUACULTURE APPLICATIONS**



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Preface

Suggestions for improving this guide and the associated forms are invited and should be forwarded to the Aquaculture Development Branch, Ministry of Agriculture Food and Fisheries (MAFF). Consult the MAFF Web site for updates and the most current version of this guide at www.agf.gov.bc.ca/fisheries/index.htm.

Disclaimer

This document is not a legal authority, and should not be used as a substitute for applicable provincial or federal acts or associated regulations. It provides information only. In the event of a discrepancy, the acts and regulations prevail.

The province of British Columbia does not consider the information submitted to the province as per the contents of this guide to be confidential, nor does the province consider this information to be supplied in confidence within the meaning of S.21(1)(b) of the Freedom of Information and Protection of Privacy Act. Information supplied in a site application may be shared with other agencies and/or with the public. Questions about how this information will be used should be directed to the Land and Water B.C. (LWBC) Manager of Aquaculture at 250-741-5667 or the MAFF Manager of Aquaculture Licensing and Enforcement at 250-897-7540.

Photo credits

The following individuals and organizations kindly provided photographs for this publication:

- Rick Jones
- BC Salmon Farmers Association
- Kim Stallknecht

Site Application Checklist

A complete Marine Commercial Finfish Aquaculture Application consists of the following components.

	Tab #	Application component and section of guide
❒	1.	Completed Marine Finfish Aquaculture Management Plan
Detailed Siting Information		
❒	2.	Zoning and land use planning
❒	3.	First Nations information
❒	4.	Local resource map
❒	5.	Stream surveys
❒	6.	Seabed and marine habitat characterization
❒	7.	Weather and oceanographic information
❒		• Climate and water conditions
❒		• Current meter data
❒		• Water quality information
❒	8.	Water licensing and access to freshwater
❒	9.	Domestic wastes
❒	10.	On-site construction and materials
❒	11.	Site history
❒	12.	Community and employment benefits
❒	13.	Additional information (optional)

Additional components required for applications (not covered in the guide)

- ❒ Crown Land Tenure application form, if applicable (Land and Water B.C. Inc.)
- ❒ Aquaculture Licence application form (Ministry of Agriculture Food and Fisheries)
- ❒ Application fee (see "Fees" section in Appendix B for details)

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Abbreviations used in this guide

BMP	Best Management Practices
CAD	Computer Assisted Drafting
CCG	Canadian Coast Guard
CEAA	Canadian Environmental Assessment Act
CRIM	Coastal Resource Inventory Maps produced by MSRM (formerly Land Use Co-ordination Office or LUCO Maps)
DFO	Fisheries and Oceans Canada
dGPS	differential Global Positioning System
GIS	Geographic Information System
GPS	Global Positioning System
LRMP	Land Resource Management Plan
LWBC	Land and Water British Columbia Inc. (formerly BC Assets and Land Corporation)
MAFF	Ministry of Agriculture, Food and Fisheries
MCAWS	Ministry of Community, Aboriginal and Women's Services
MSRM	Ministry of Sustainable Resource Management
MWLAP	Ministry of Water Land and Air Protection
NAD	North American Datum
NWPA	Navigable Waters Protection Act
RIC	Resource Inventory Committee
RISC	Resources Information Standards Committee
TRIM	Terrain Resource Information Management
UTM	Universal Transverse Mercator

Introduction

The purpose of this guide

The Guide to Information Requirements for Marine Finfish Aquaculture Applications ("the guide") describes the information required by the provincial government in order to review an application for a marine finfish aquaculture site.

The guide provides assistance and direction to applicants for completing and submitting an application to government, including:

- a clear explanation of the required components of an application;
- required or recommended methods for collecting and submitting information; and,
- Internet links, government contacts and other resources that may provide additional assistance for completing an application.

The guide is designed to be used in conjunction with the Management Plan Form, which is a template for preparing a site-specific Management Plan detailing the specific operational parameters of the site and facility. Upon submission to and approval by government, a Management Plan becomes a legal document both as part of the Crown land tenure agreement and a condition of an aquaculture licence.

NOTE: The federal government may have information requirements in addition to those described in this guide. Contact Fisheries and Oceans Canada for federal information requirements.

An application for a new aquaculture site and facility must consist of a completed Management Plan and other supporting information as described in this guide. See the diagram below for a simplified depiction of these documents.

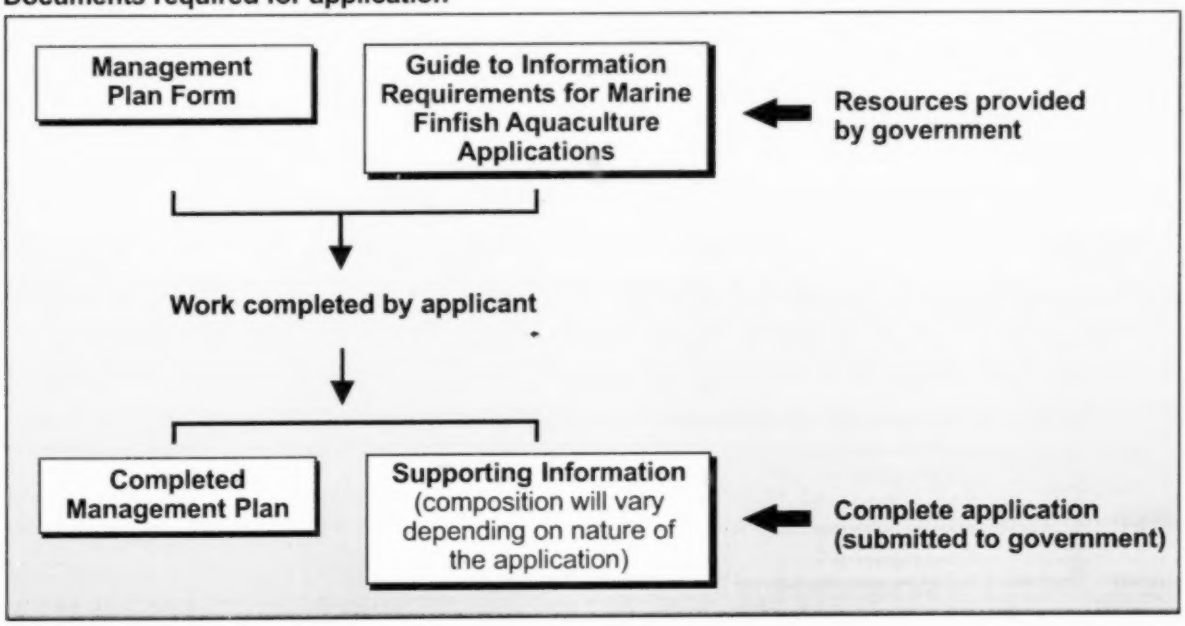
The exact contents of an application will vary depending on its purpose, and may not require all information components described in this guide. The Application Key on page 3 outlines the information required for each application type.

Projects relevant to this guide

This guide, in conjunction with the Management Plan Form, is used to apply for the following categories of projects undertaken on marine waters:

- a new finfish aquaculture facility or impoundment facility (for salmonid or non-salmonid species);

Documents required for application


Management Plan Form
Guide to Information Requirements for Marine Finfish Aquaculture Applications
Resources provided by government
Work completed by applicant
Completed Management Plan
Supporting Information (composition will vary depending on nature of the application)
Complete application (submitted to government)

- relocation of an existing finfish aquaculture facility to a new site (subject to an existing provincial policy on relocating aquaculture sites);
- replacement of an expiring Crown land tenure; and,
- an amendment to an existing aquaculture licence or Crown land tenure (for example, changes to production volume, species, or facility infrastructure) or tenure boundaries.

See the Application Key **on page 3** for specific application requirements.

Applying for a new site

A person or company applying for a new site is required to submit information on the proposed site and facility to government. A completed application will contain information about the proposed site and facility, including:

- the location, layout and proposed production levels of the facility;
- the site's proximity to other marine and upland resources; and,
- the oceanographic and meteorological conditions experienced at the site.

A new site application is reviewed by the following agencies:

- MAFF and LWBC;
- Fisheries and Oceans Canada (DFO), the Canadian Coast Guard (CCG); and,
- other government agencies and non-government organizations that may have an interest in providing comments and recommendations to regulatory agencies.

The specific agencies which will review an application will vary depending on the nature of the application. Generally, LWBC will act as the one window through which applications are received and distributed to reviewing agencies. In some cases, however, applications will be submitted to MAFF, if the application is primarily relevant to MAFF's mandate. The Application Key on the following page summarizes which agency will receive each type of application.

For detailed information on the roles of government agencies in reviewing an application, see Appendix B.

Applicants should be aware that approvals received under this application are separate and distinct from specific requirements of MWLAP's Finfish Aquaculture Waste Control Regulation (e.g. registration requirements). MWLAP is solely responsible for issuing the approvals under this regulation which must be obtained before a site can be stocked with fish.

Further details on the requirements of this regulation are provided in sections 6 and 9 of the guide.

Amending an existing site

Submission of all sections of an application may not be required when applying for a licence or tenure amendment. See the Application Key for a list of application types and the corresponding submission requirements.

Submission format

In order to facilitate government review of submitted applications and to establish a standardized format for all applications, applicants are strongly encouraged to follow the submission format guidelines below.

- All requested information is to be submitted to the appropriate government agency in a durable format such as a three-ring binder or spiral binding.
- At least five copies of the application must be submitted in order that copies can be distributed by LWBC to the relevant government review agencies.
- The completed Management Plan should be inserted at the front of the binder.
- Each section of the binder must be labelled with a numbered separator page or tab, matching the numbering sequence established in the guide.
- Each numbered section of the binder must contain all information required for that

section (including supporting information such as maps, diagrams, etc.).

- The applicant's company name and site's common name should be identified on the front cover of the binder.
- If available, the LWBC land file number, the Aquaculture Licence reference number and the Canadian Coast Guard file number should also be indicated on the cover.
- Other forms and fees not covered in this document may also be required. See the Site Application Checklist at the front of this guide to ensure the information submitted is complete.

Useful Government contacts and Internet addresses (Web sites) are listed in Appendix A of this guide.

Application Key

Generally, LWBC will act as the one window through which applications are received and distributed to reviewing agencies. In some cases, however, applications will be submitted to MAFF, if the application is primarily relevant to MAFF's mandate.

The table below indicates which sections of an application must be completed for new or renewing sites/facilities and where a completed application should be sent.

Type of application	Required information	Send to:
New site and/or new facility	**Complete Application Package** (Sections 1-13)	LWBC
Renewal of an expired aquaculture licence	**Management Plan** (Sections 1.1 – 1.11) and Detailed Production Table	MAFF
Replacement of an expired Crown land tenure	**Management Plan** (Sections 1.1 – 1.11) and Detailed Production Table	LWBC
Modification to tenure boundaries (i.e. size, shape and/or location)	**Management Plan** (Sections 1.1 – 1.11) and Detailed Production Table	LWBC
Modification to facility infrastructure (e.g. number, size, type of net cages or buildings) not affecting or exceeding tenure boundaries	**Section 1.6:** Total Area **Section 1.7**: Operational Layout Diagrams **Section 1.8**: Side View Diagram of Improvements **Section 1.9**: Review of Infrastructure & Mooring Plans **Section 1.10**: Improvements Schedule	MAFF
Modification to maximum total production and/or species cultured	**Section 1.11**: Facility Production Overview and Detailed Production Table	MAFF

Note: A federal environmental screening under CEAA (the Canadian Environmental Assessment Act), if required, may change the components required for submission to DFO. Contact DFO for the current policy on CEAA information requirements.

1
The Management Plan

Sections 1.1 through 1.11 of this guide provide instructions on completing the pages and tables that make up the Management Plan Form. The covering page of the Management Plan Form requests important contact information for the application and must appear as the first page in the application binder. **Additional Management Plan Forms can be obtained from MAFF or LWBC upon request**.

Submit the completed Management Plan and any supporting information (including maps, diagrams, etc.) under **Tab 1** of the application binder.

Site location information

Enter the following information on the Management Plan Form provided.

1.1 Location identification

Provide the number of the map/chart in the series below that shows the location of the site:

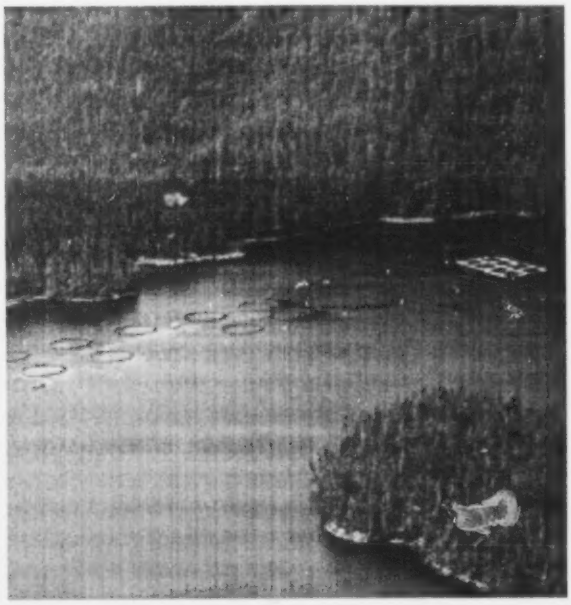
- British Columbia Geographic System (BCGS) map; and,
- Canadian Hydrographic Service (CHS) chart.

Provide the geographic coordinates of the site's staking notice in latitude and longitude, to the nearest second (one second = approximately 0.02 degrees when using decimal degrees). These coordinates may be derived in any of three different ways:

- **dGPS** obtained from reading a dGPS unit on the site;
- **GIS** located on a digital map, on a computer; or,
- via direct **Charting**, read from map or chart.

In the space provided on the Management Plan Form, indicate which of the above methods was used in deriving the site co-ordinates.

> **Note**: Any map provided in an application should clearly indicate whether it is based on the NAD 27 or NAD 83 chart datum.



Describe the location of the staking notice relative to the tenure application in the space provided on the Management Plan Form.

Additional resources and contact information

Some BCGS maps may be available from LWBC's Nanaimo office. These and other maps can also be obtained from Maps BC and map distributors. BC OnLine (www.bconline.gov.bc.ca/) is a one-stop Internet gateway to government information and services in British Columbia. Applicants may choose to pay the BC OnLine fee in order to access information on land titles, property assessments, B.C. companies, registrations under the Personal Property Security Act (i.e. liens and security agreements) and a range of other information services.

Information on obtaining CHS charts is available on the Canadian Hydrographic Service Web site at: www.chs-shc.dfo-mpo.gc.ca/chs/en/.

1.2 Site location details

Minimum requirements

1.2.1

If the site has been surveyed, provide the site's Land District number and lot number.

1.2.2

If the site has not been surveyed, provide its metes and bounds. The point of commencement for this description should be indicated in relation to the nearest surveyed lot. For example:

"882m due west (270°T) of the southwest corner of Lot 1498 (Deserters Is.), then 150m at 145.5°T then 200m at 240.5°T then 160m at 324°T and bound by the SE shoreline of Salmon Island."

Surveyed lots suitable as commencement points for measuring metes and bounds are available along the entire B.C. coast, including the north coast. Applicants may reference any existing surveyed lot such as First Nations' reserves. Applicants may contact LWBC for assistance in identifying a point of commencement.

Additional resources and contact information

Contact LWBC for more information on Land Districts and tenuring or visit the LWBC Web site at http://lwbc.bc.ca/applying_for_land/.

1.3 Geographical description of site

Minimum requirements

Provide a general geographic description of the site. For example: "Off Anne Point on the southeast side of Salmon Island, in Hopeful Passage."

1.4 Unique name for site

Minimum requirements

Suggest a unique name for the site that will clearly distinguish it from other sites. For example: "Salmon Island" or "South Salmon Island" or "South Salmon, Hopeful Passage."

In order to ensure clarity and prevent duplication, the final decision on establishing a unique site name will be made by LWBC.

For more information on geographical names, applicants may consult the B.C. Geographical Names Web site at: www.gdbc.gov.bc.ca/bcnames/.

1.5 Location maps

Minimum requirements

Submit copies of the following maps showing the general location of the proposed facility. Label these **Figure 1.5.1** and **Figure 1.5.2** respectively and include them under **Tab 1** in the application binder.

See map examples on pages 7 and 8.

Figure 1.5.1: A map or chart (at 1:40,000 to 1:150,000) on which the general location of the site is identified with a box and/or arrow.

Figure 1.5.2: A 1:20,000-scale BCGS map showing:

- geographic reference points;
- existing district lots within one kilometre of the proposed tenure boundary;
- a rectangle denoting the proposed tenure area, drawn approximately to scale; and,
- the location of the site's staking notice.

Provide maps on 8.5" x 11" paper in order to facilitate reproduction of submitted applications. Ensure latitude and longitude lines are visible and labelled on maps (these may need to be added by hand). The recommended projections for submitted maps are Universal Transverse Mercator (UTM) for hard copy maps and Albers for digital maps.

Note: The BCGS map may also be used to identify nearby land and marine features as required under "Local Resource Map" in section 4.

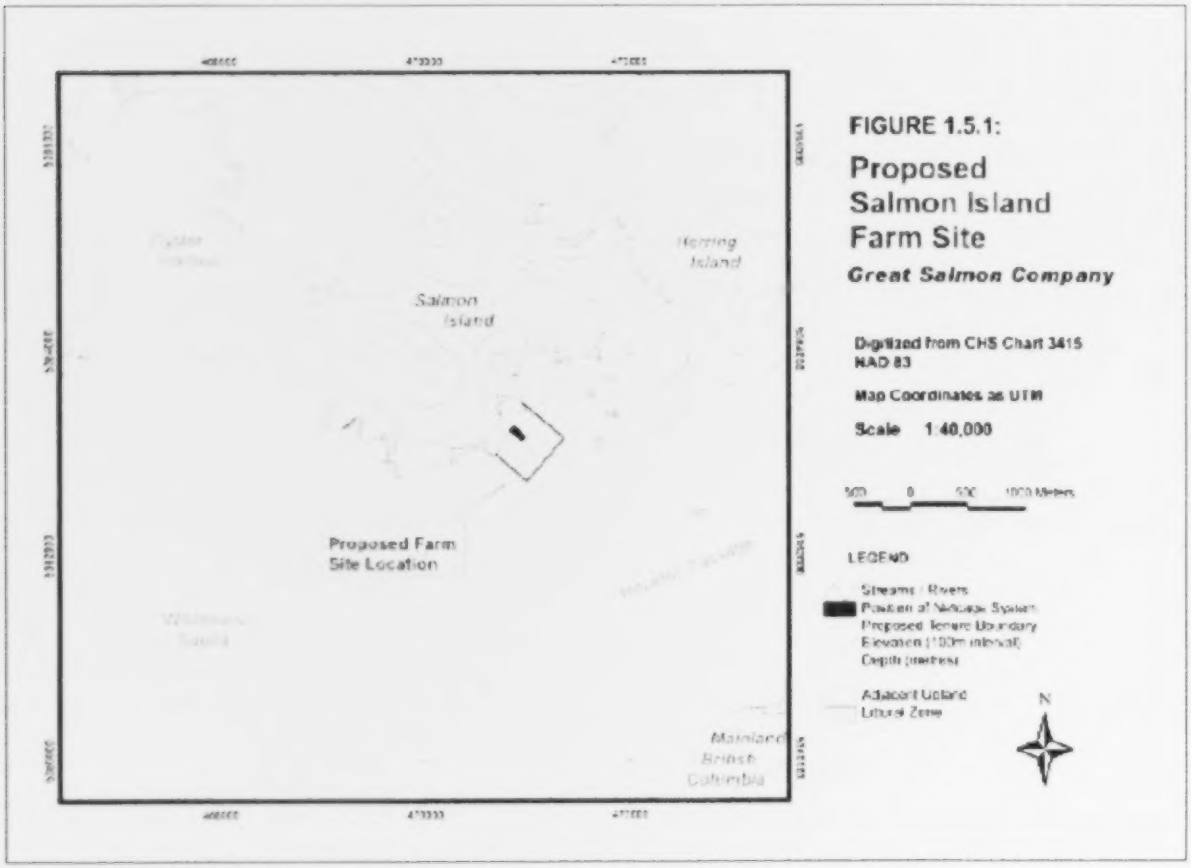


Figure 1.5.1 Example: general location map

1.6 Total area of application

Information in this section is used primarily for the purpose of calculating Crown land rent.

Minimum requirements

Enter the total area of the tenure, to the nearest tenth of a hectare. For example 18.7ha. (Note: 1ha=100m x 100m.)

1.6.1 Intensive use area

Rent may vary within a single tenure depending on the type of use identified for different areas of the tenure.

"Intensive use area" is the area of Crown land used for aquaculture activities and structures that are directly associated with the production of finfish.

The intensive use area will encompass net cages, netting, float camps, net storage, docks, mort sheds and other structures and will include a 30-metre buffer around these structures. This buffer is mandatory and is intended to cover the area where anchor lines are most likely to pose a restriction to navigation due to the scope and angle of lines closest to the structures. Outside of the 30-metre buffer, the lines are generally at a suitable depth to allow safe passage of a boat. However, any anchor lines beyond the 30-metre buffer that restrict access or hamper navigation must also be included as part of the intensive use area.

Minimum requirements

Enter the intensive use area, including the 30-metre buffer area, in the space provided on the Management Plan Form. This must be expressed both in hectares (e.g. 2.2ha) and as a percentage of

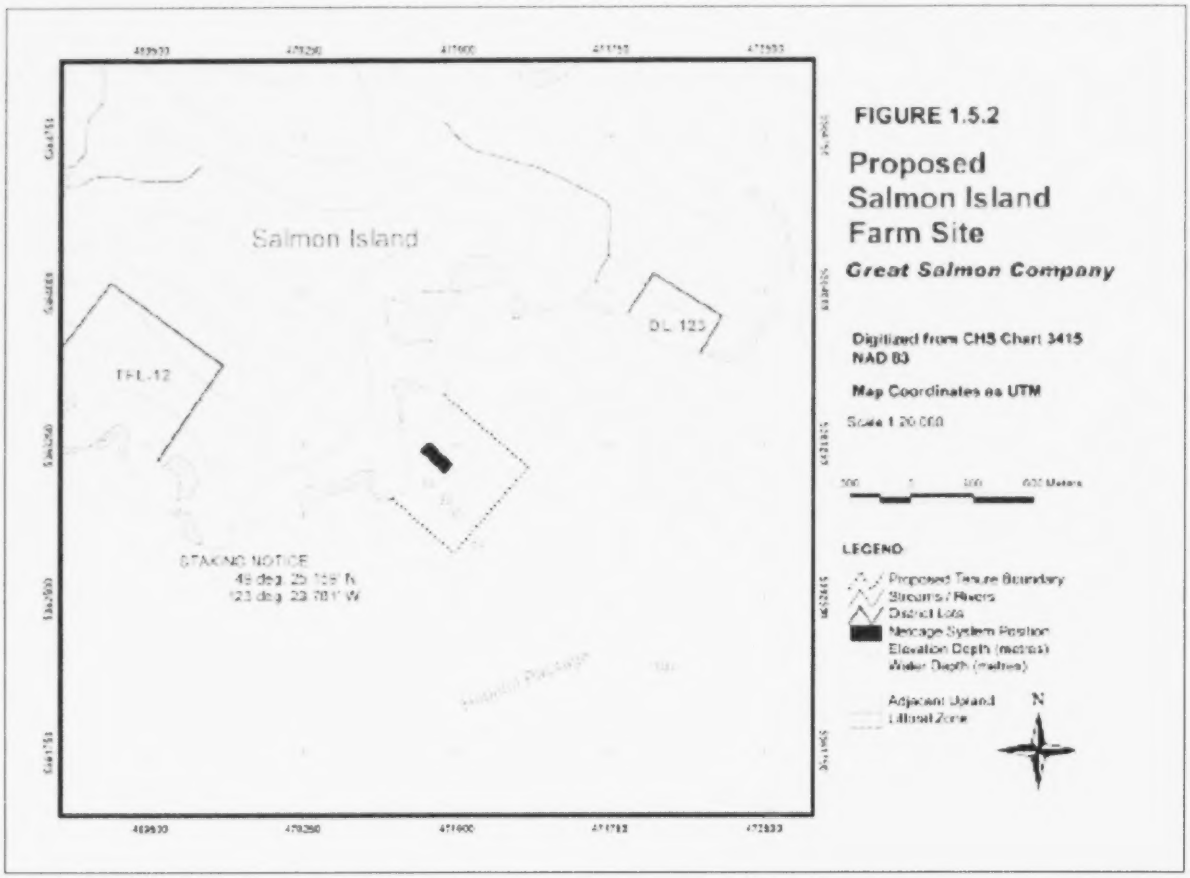


Figure 1.5.2 Example: detailed location map

the total tenure area (e.g. 8.8 per cent). For tenure or licence renewals, indicate both the existing and the proposed intensive use area.

1.6.2 Extensive use area

"Extensive use area" means the area of Crown land used for anchoring structures outside of intensive areas but that do not impede navigation or access to lands beyond (in other words, the portion of the tenure area not occupied by farm structures).

Minimum requirements

Enter the extensive use area in the space provided on the Management Plan Form. This must be expressed both in hectares (e.g. 22.8ha) and as a percentage of the total tenure area (e.g. 91.2 per cent). For tenure or licence renewals, indicate both the existing and the proposed extensive use area.

Additional resources and contact information

LWBC staff refer to their agency's Aquaculture Policy when calculating tenure area, Crown land rent and addressing other issues associated with aquaculture tenures. This policy is available online at: http://lwbc.bc.ca/applying_for_land/aquaculture/aqua_policy.pdf.

Contact LWBC for further information on Crown land rent and tenures.

Site operations and production data

1.7 Operational layout diagrams

Minimum requirements

Attach one or more to-scale plan-view diagram(s) of the facility showing all the features in the following list. If more than one cage array configuration or layout is planned, applicants must submit diagrams of all possible scenarios accompanied by a brief description of how and when the different configurations would be used. A 1:5,000 scale is recommended in order to capture the required features:

- the tenure boundary (current and/or proposed);
- the net cage array(s) and/or other containment structures (indicate the maximum number of structures that may be installed);
- anchor blocks and mooring lines (indicate the depth of anchor blocks);
- navigational markers (required only if NWPA permit is already in place);
- potential navigational pathways through or around facility structures;
- buildings and floats, including staff quarters (if applicable);
- domestic water lines (if applicable);
- mortality storage and net cleaning stations (if applicable);
- bottom depth contours (in recommended 10-metre intervals from the lowest low-water mark (LLWM))*;
- predominant current direction(s) (see also Section 7); and,
- true north.

*Indicate source(s) of bathymetric data if not derived from Canadian Hydrographic Service charts.

Note: There is no requirement for prepared maps and diagrams to be in CAD format or to be prepared by a professional draftsperson. However, diagrams must be of "professional quality," i.e. legible, to the required scale, and accurately depicting how the proposed facility structures will be installed at the site.

Label diagram(s) **Figure 1.7** and include under **Tab 1** in the application binder.

1.8 Side-view of improvements diagram

Minimum requirements

Attach a to-scale, side-view diagram of the net-cage system (a 1:2,000 scale is recommended). The diagram must illustrate and itemize all improvements above the surface and include all underwater structures to a depth of 10 metres (required by Coast Guard for navigation purposes). The diagram does *not* need to show bathymetry, anchor lines or other structures below a 10-metre depth. Submit this diagram as **Figure 1.8** under **Tab 1** of the application binder.

1.9 Review of infrastructure and mooring plans

The Operational Layout Diagram (Figure 1.7) and Side View of Improvements Diagram (Figure 1.8) must be accompanied by a review and endorsement (stamp/signature) by a person who has assessed the design of the containment structures, accessory floats and mooring equipment for their suitability and safety at this location. This review must meet the requirements of *either* Option 1 or Option 2 below.

Option 1: Normal conditions
In most cases, the review and endorsement may be completed by any qualified professional. If meteorological conditions at the site or the facility infrastructure warrant, a more rigorous review (Option 2) may be required.

For the purpose of this review, a "qualified professional" can be a company employee or a cited individual with expertise in designing and installing containment structures and improvements specific to aquaculture facilities.

The applicant must provide a covering letter identifying the qualified professional, as well as a curriculum vitae outlining the individual's knowledge, skills and abilities. Where possible, references should also be provided from others

who have observed and evaluated this person's work. Supplier endorsement of the person is not sufficient, unless the individual has been employed by the supplier to design and install systems.

Option 2: Extraordinary conditions
There are two situations that may warrant a review by a specialized third-party professional such as a marine surveyor, marine engineer or another third-party professional with comparable qualifications or expertise in the installation of aquaculture infrastructure:

- if the facility will employ technology that is relatively new and has not been widely tested within the aquaculture industry, and/or;
- if high-energy weather, wave or current conditions are predicted at the site.

The initial decision on the type of review (Option 1 or Option 2) may be made by the applicant. Upon receiving the application, however, MAFF staff may deem that site conditions warrant the

Definitions

A **professional marine surveyor** is a professional person with the academic qualifications and technical expertise to practice the science of measurement and to apply that expertise to the purpose of planning the design and/or installation of improvements and containment structures at an aquaculture facility.

A certified practising **marine engineer** may also be hired by an aquaculture company to design and/or install improvements and containment structures at the aquaculture facility. The Association of Professional Engineers and Geoscientists of B.C. regulates and governs the profession under the authority of the Engineers and Geoscientists Act.

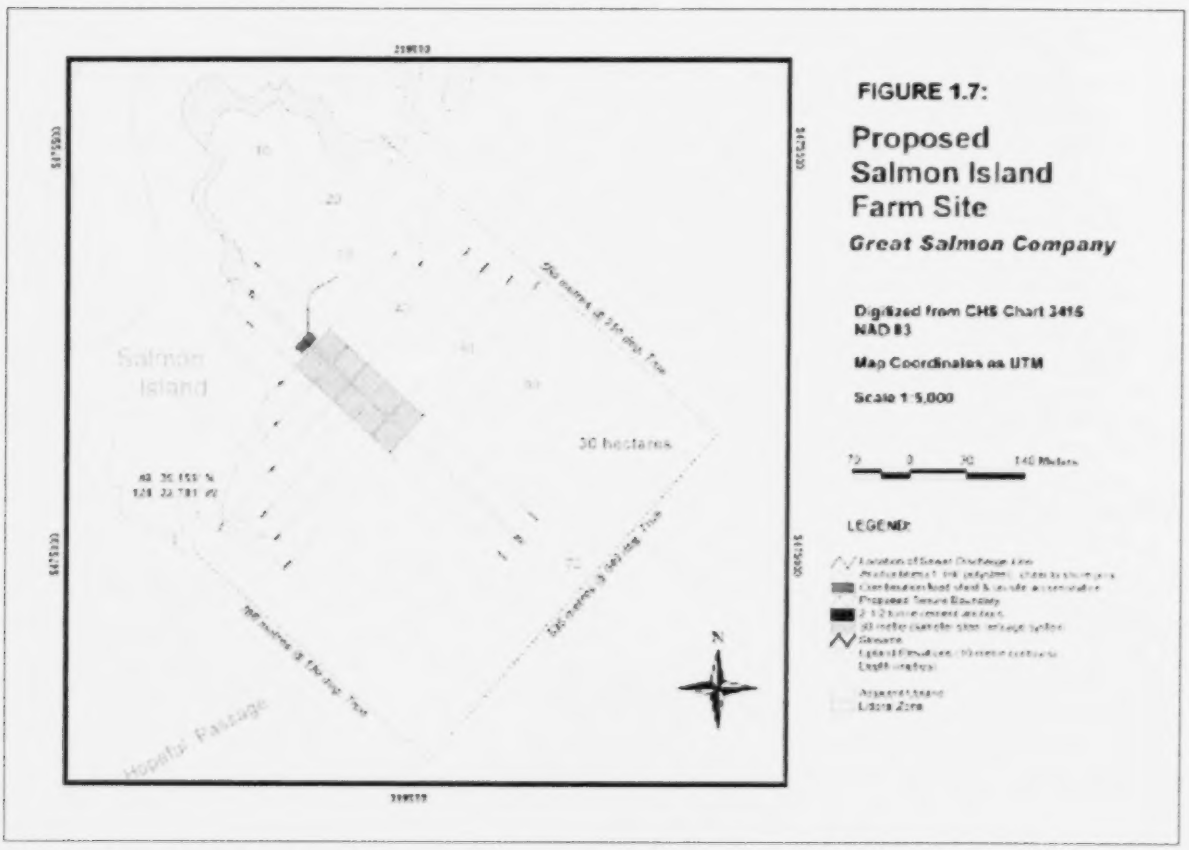


Figure 1.7 Example: operational layout diagram

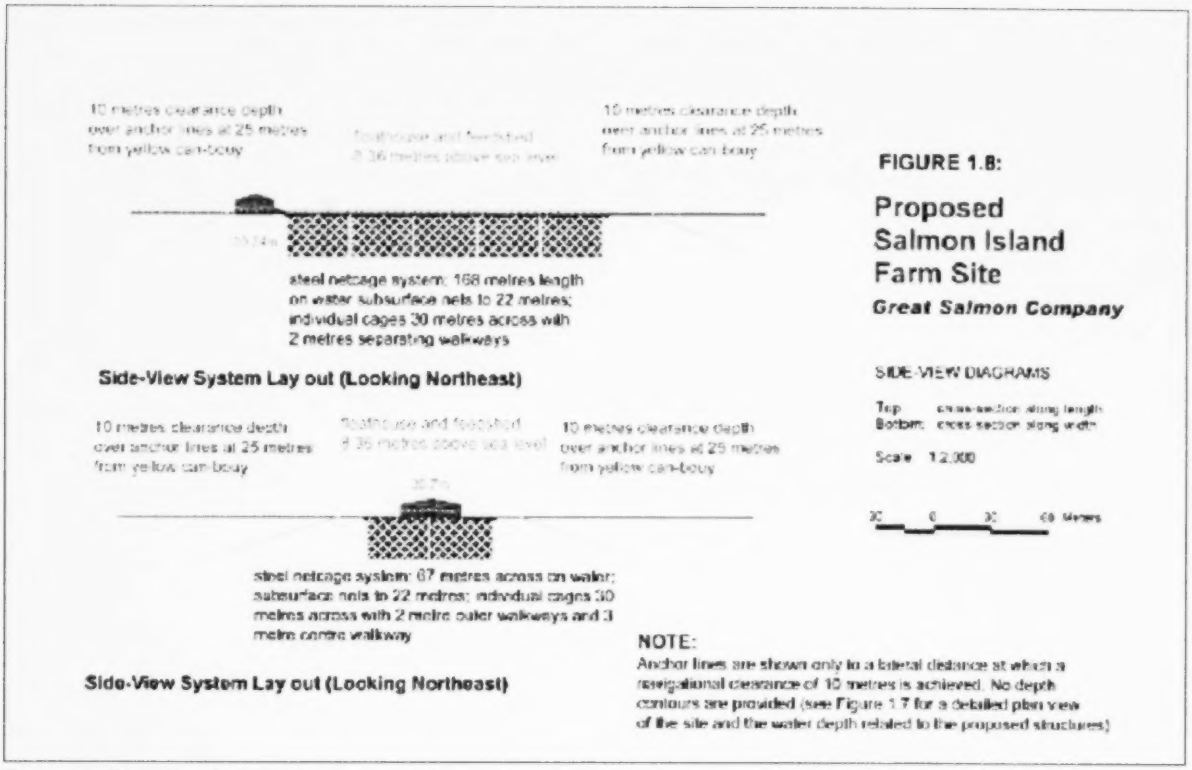

10 metres clearance depth over anchor lines at 25 metres from yellow can-buoy
10 metres clearance depth over anchor lines at 25 metres from yellow can-buoy
steel netcage system: 168 metres length on water subsurface nets to 22 metres; individual cages 30 metres across with 2 metres separating walkways
Side-View System Lay out (Looking Northeast)
10 metres clearance depth over anchor lines at 25 metres from yellow can-buoy
10 metres clearance depth over anchor lines at 25 metres from yellow can-buoy
steel netcage system: 67 metres across on water; subsurface nets to 22 metres; individual cages 30 metres across with 2 metre outer walkways and 3 metre centre walkway
Side-View System Lay out (Looking Northeast)
FIGURE 1.8:
Proposed Salmon Island Farm Site
Great Salmon Company
SIDE-VIEW DIAGRAMS
Top:
Bottom:
Scale 1:2,000
NOTE:
Anchor lines are shown only to a lateral distance at which a navigational clearance of 10 metres is achieved. No depth contours are provided (see Figure 1.7 for a detailed plan view of the site and the water depth related to the proposed structures)

Figure 1.8 Example side view of improvements diagram

more extensive review (Option 2), and may require applicants to pursue this option. Applicants are strongly advised to contact MAFF staff in Courtenay to establish which option is appropriate prior to completing and submitting the application.

Specifics of the review

Under either Option 1 or 2 above, the following factors must be considered in the review of the facility design:

- the manufacturer's design specifications for cages and other equipment;
- the layout and design of the mooring system (for risk minimization); and,
- the experience of the mooring crew or mooring consultants in relation to:
  - meteorological conditions and seasonal weather patterns;
  - oceanographic conditions, currents and tidal flows; and,
  - upland topography, site bathymetry and substrate.

Submit this review as **Part 1.9** under **Tab 1** in the application binder.

Additional resources and contact information

Applicants are advised to contact the MAFF Courtenay office with questions regarding a third-party review or for additional assistance in completing this section.

1.10 Improvements schedule

Minimum requirements

Complete "Schedule 1.10: Improvements" of the Management Plan Form. Describe the structure type, quantity, dimensions and area occupied at water level for all existing and planned structures. Include all buildings, barges, containment structures, docks, pilings and other floating and land-based structures associated with the application in the table provided (see example on page 12).

Example Schedule 1.10: Improvements

Description	Quantity	Dimensions (in metres)	Area at water level
e.g.: Net cages	*12*	*15m x 15m x 15m cages*	*2700m²*
e.g.: Feed barge	*1*	*40m x 30m*	*1200m²*

Indicate if artificial lighting will be used to enhance production by checking the appropriate box on the form.

Additional resources and contact information

Contact the MAFF Courtenay office for assistance or information on describing site improvements.

1.11 Facility production overview

This section isolates key production components for the purpose of simplifying site inspections by provincial Fisheries Inspectors.

Minimum requirements

Complete "Schedule 1.11: Facility Production Overview" found in the Management Plan Form. In this schedule, list the common name and scientific name of all species to be cultured. If applying for an amendment, include *all* currently licensed species in this list.

Applicants may wish to complete the Details of Production Table (a supplement to the Management Plan Form) first, in order to calculate the facility production.

Indicate the planned Maximum Total Production, in tonnes (round weight), per grow-out cycle (round weight is defined as the weight of the whole fish as it comes from the water before any treatments or dressing). Submit this schedule under **Tab 1** of the application binder.

Additional resources and contact information

Contact the MAFF Courtenay office for assistance or for further information. The Finfish Aquaculture Waste Control Regulation may be accessed online at: http://www.qp.gov.bc.ca/statreg/reg/W/WasteMgmt/256_2002.htm

Detailed Production Table (Supplement to Management Plan Form)

Background: Why this information is required

The production details requested in this table will not constitute a portion of a completed Management Plan and will not become terms and conditions of an aquaculture licence. However, this information is required as part of an application and serves a number of important purposes. The submitted data will be analyzed by MAFF staff in order to determine the feasibility of the proposed site production in consideration of the biophysical capability of the site. Information provided elsewhere in the application (including ocean currents and facility infrastructure), in addition to historical data on farm wastes and underwater site surveys, may also inform this analysis. Information on the stock and sex of the fish is requested for the purpose of tracking industry trends. Data provided in the Detailed Production Table may also be used to derive the production summary information requested in Schedule 1.11 of the Management Plan Form.

Minimum requirements

The Detailed Production Table is provided as a supplement to the Management Plan Form. This information will not be part of a completed

Example: Detailed Production Table

	Species	Stock[1]	Sex[2]	Number of Fish @ SW Entry	Mean Wt. @ SW Entry[3] (g)	Grow-out period (mo.)	Survival of SW Entry (%)	Mean Wt. @ Harvest[4] (kg)	Harvest Tonnage[5] (T)	FCR (bio)[6]
	Salmo salar	Mowi	Reg.	200,000	85	18	90	5	900	1.21
(and) or	*Salmo salar*	Namsen	Mono	100,000	100	16	88	4.5	396	1.3
~~and~~ (or)	*Oncorhynchus tschawytscha*	Big Qualicum	Mono	450,000	20	24	75	4	1350	1.25
	Maximum total production per cycle[7] (T)								1350	

Management Plan. Applicants may satisfy the requirements of this section either by completing the table provided or by submitting the same information in another format (for example, using a standard company-generated production schedule). Regardless of the chosen format, applicants must ensure all information requested in the Detailed Production Table is provided. This includes:

- species;
- stock;
- sex;
- number of fish at saltwater entry;
- mean weight at saltwater entry;
- grow-out period;
- survival of saltwater entry;
- mean weight at harvest;
- harvest tonnage;
- feed conversion ratio; and,
- maximum total production.

Definitions of the terms used in the table can be found in the "Definitions" section at the end of this guide.

Interpreting and using the table

The following description explains how to complete the Detailed Production Table. If alternate methods are used to submit this information, ensure that all possible production scenarios at the site are described.

- In the uppermost row of the table, enter the primary species to be reared.
- In subsequent rows, enter any other species that will or may also be reared under this licence.
  - In cases where the primary species will be grown simultaneously with another species, circle "and" on the row for that species.
  - In the cases where a species will not be grown simultaneously with others, circle "or" on its row.
- The "Maximum Total Production" entry must represent the greatest possible tonnage to be harvested during any single production cycle. This may involve a combination of species or stocks and is calculated either:
  - by adding the harvest tonnage for all species to be grown simultaneously; *or*,
  - by entering the harvest tonnage of the species, or combination of species, with the highest production, if all species will not be grown simultaneously.

In the example table, the data indicate that the harvest level at the facility will be *either* 1350 T of Chinook or 1296 T of Atlantics (900 T Mowi + 396 T Namsen). Because 1350 is the greater amount, this number is entered as the Maximum Total Production. Upon approval of the Management Plan, this example site will be licensed to harvest a maximum of 1350 T during any single production cycle.

Clearly label the detailed production information and include it under **Tab 1** of the application binder.

Additional resources and contact information

Contact the Aquaculture Development Branch at the MAFF Courtenay office with any questions regarding site production. Information may also be found at: www.agf.gov.bc.ca/fisheries/index.htm

Detailed Siting Information

Each application will require the completion of some or all of the following sections (2 through 13). See the Application Key at the beginning of this guide to verify the required application components. There are no forms associated with the remainder of this guide.

2
Zoning and land use planning

Applicants must provide the following information regarding zoning at the site:

- the name of the regional district or municipality in which the site is located;
- an indication of whether or not zoning is in place at the site;
- if zoning is in place, a description of the zoning designation, including whether the zoning designation accommodates aquaculture development (this information is available from the regional district or municipality);
- if zoning is not in place, an indication of whether or not a zoning review has commenced and the status of this review at the time of submission.

Not all areas of the coast require local government zoning, as only some regional districts and municipalities have zoning requirements for the foreshore. If zoning is not required, applicants should simply make an indication of this in the application package.

Submit the above information and any additional documentation relevant to zoning under **Tab 2** in the application binder.

Additional resources and contact information

A map and list of all provincial regional districts is available online at the BC Stats Regional Districts Web site (www.bcstats.gov.bc.ca/Regions/regDist.htm). The local government division of the MCAWS Web site (www.mcaws.gov.bc.ca/lgd/) provides a listing of local government contacts. Contact the local government for information on its zoning requirements for aquaculture. Applicants should also be aware of the implications and priorities of approved Land Resource Management Plans (LRMP), Aquaculture Opportunities Studies or Integrated Coastal Land Use Plans in the proposed site area. Contact MSRM for more information or consult the MSRM "Coastal Planning, Projects and Marine Initiatives" Web site at: http://srmrpdwww.env.gov.bc.ca/coastal/index.htm.

Note: If current zoning does not permit finfish aquaculture or industrial/commercial facilities, applicants will need to apply to the regional district for rezoning. Information on fees and conditions for rezoning applications can be obtained from the appropriate regional district or municipality.

3
First Nations information

Background

Government staff will consult with First Nations to ensure that the proposed facility does not unjustifiably infringe on the aboriginal rights of First Nations that have traditionally lived in the area. Applicants are also advised to directly contact First Nations early in the planning process in order to discuss the intended project.

Generally, proposed aquaculture projects will not be approved if they are within one kilometre of a First Nation's reserve. Exceptions may be granted if the support of a First Nation is obtained or if a First Nation wishes to operate a salmon farm within one kilometre of their reserve (independently or in a partnership). If either of these conditions applies, a Band Council Resolution from the First Nation indicating support for the proposed project must be obtained and submitted with the application.

Minimum requirements

Applicants must conduct the following activities:

- Identify the First Nation(s) who traditionally occupy or use the area for which the application is proposed.
- Initiate contact with local First Nation(s) to inform them of the proposal.
- If the site is located within one kilometre of a First Nation's reserve, obtain an official Band Council Resolution indicating support for the proposed project.

Include any documentation of correspondence with First Nations, including a Band Council Resolution (if obtained) under **Tab 3** in the application binder.

Section 4 of the guide requires that applicants identify resources on a Local Resource Map. These include any areas that may be significant to First Nations for food, social or ceremonial use and First Nations' reserves located within one kilometre of the site. See section 4 for details.

Additional resources and contact information

The following resources may be useful in determining the locations of First Nations' reserves and traditional territories in B.C.:

- Coastal Resource Inventory Maps (CRIMs) produced by MSRM, may indicate the locations of First Nations' reserves near the site area.
- The Canadian Hydrographic Service marine charts identify the locations of most First Nations' reserves and may serve as a useful first step in identifying reserve locations.
- The B.C. Treaty Negotiations Office Web site provides an alphabetical list of all First Nations in B.C. (www.gov.bc.ca/tno/negotiation/tribal_councils.htm).
- The federal Department of Indian and Northern Affairs provides online "community profiles" of First Nations, including contact names and addresses, and is searchable by band name (http://esd.inac.gc.ca/FNProfiles/FNProfiles_list.asp).

For further information about aboriginal relations and consultations, or to confirm traditional territory boundaries, contact the B.C. Treaty Negotiations Office.

To see how the B.C. government conducts First Nations consultations, refer to the Aboriginal Interests Assessment Procedures, used by LWBC to evaluate aquaculture applications (http://lwbc.bc.ca/for_first_nations) and the British Columbia Consultation Guidelines (http://srmwww.gov.bc.ca/cpp/docs/ConsultationPolicyFN.pdf).

4
Local resource map

Applicants are required to undertake on-site investigations to identify habitat, wildlife, social, navigational or environmental resources or development projects in the area. It may be necessary to contract professional assistance for some of this work.

Government will review and evaluate this resource information based on a number of criteria specific to the siting of finfish aquaculture facilities. These criteria have been developed based on the recommendations of the Salmon Aquaculture Review and have been developed separately from this guide in recognition of the fact that they may be adjusted over time in response to new information or a change in federal or provincial siting policy. A separate policy document is available from government that outlines these criteria.

Minimum requirements

The applicant must indicate the locations of the resources and resource uses listed below on one or more maps. New maps may be created by the applicant or these features may be added by hand to a good-quality reproduction of a 1:20,000 BCGS map. The exact format and scale of the map(s) is not prescribed. However, maps must be of professional quality and should cover at least **one kilometre in all directions from the proposed tenure boundary**. Clearly indicate the location of the proposed facility on the map, in addition to the features listed below.

Features and resources to appear on a local resource map ☑

1.	Terrestrial wildlife habitat	☐
2.	Migratory bird habitat	☐
3.	Freshwater streams	☐
4.	Fish and marine mammal habitat	☐
5.	Herring spawn areas	☐
6.	Intertidal bivalve shellfish beds and commercial shellfish aquaculture operations	☐
7.	Other aquaculture operations including marine finfish farms	☐
8.	Harbours, wharves, docks and anchorages	☐
9.	Privately-owned upland property	☐
10.	First Nations: • Reserves • Areas or features of food, social or ceremonial importance	 ☐ ☐
11.	Sites of cultural, heritage or archaeological significance	☐
12.	Parks, ecological reserves and protected areas	☐
13.	Other development features: • Regularly used recreational areas (includes tourism features, camping areas, etc.) • Logging operations (includes sorting, booming, dumps, drops etc.) • Sources of potential pollution/contamination (e.g. outfalls, roadways, processing facilities)	 ☐ ☐ ☐

Figure 4.1

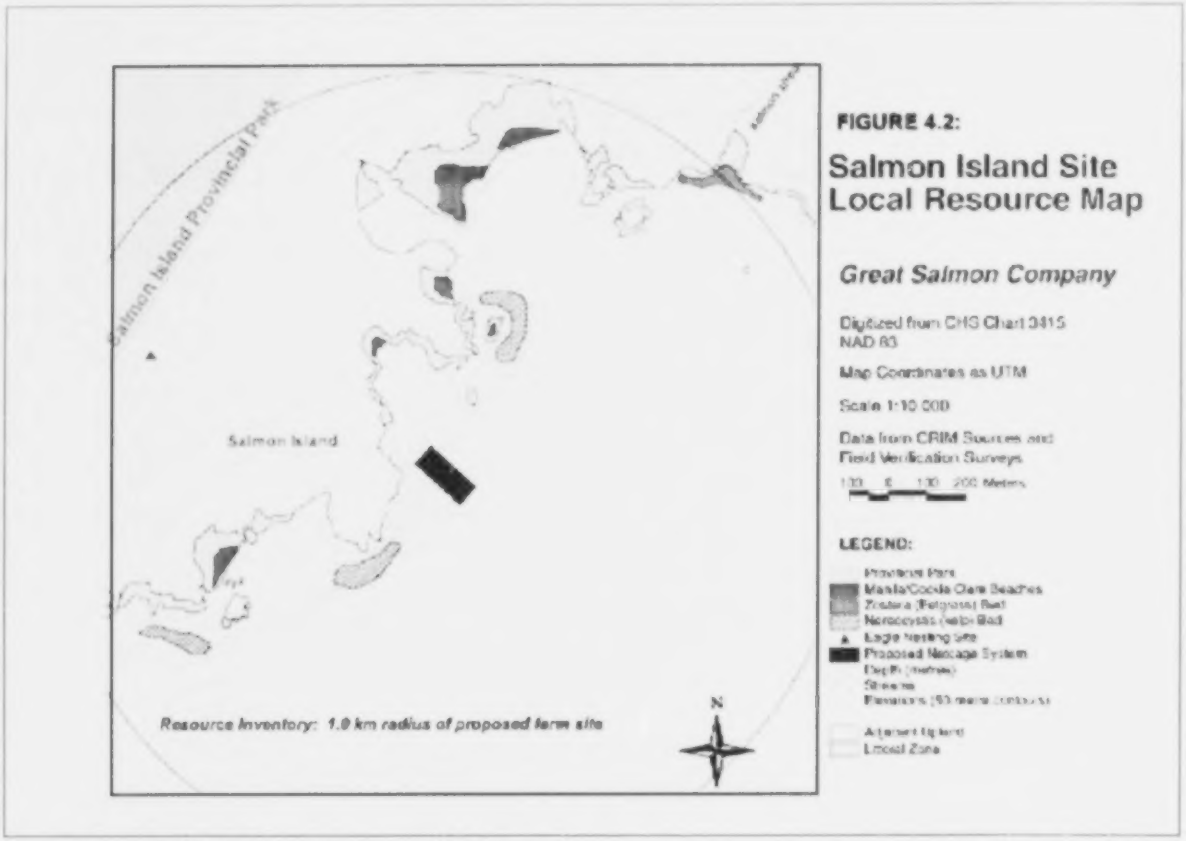


Figure 4.2 Example: local resource map

In addition to indicating these features on a map, applicants are encouraged to further document the methods used to identify features, including how they determined that they were present or not present, within one kilometre of the proposed tenure boundary. A short written description of the source(s) of information for each feature is recommended.

Submit the Local Resource Map under **Tab 4** of the application binder. Also include any supporting or descriptive information such as company survey results, reports, third-party reviews, or other materials related to local resources.

Company-produced Local Resource Maps are an essential component of the application package. Ensure that all site-specific maps are included in the submitted application.

Applicants are cautioned that the CRIMs should be used only as a first step in identifying local resources, as the CRIM data may not be exhaustive and may change over time. Applicants should be aware of any discrepancies between information on the CRIMs and observations made during on-site investigations.

Additional resources and contact information

The provincial government can supply applicants with Coastal Resource Information Maps (CRIMs) which contain information about known environmental resources and other land uses in the area surrounding a proposed facility. These maps are available from the MSRM Decision Support Services unit for a nominal fee. These maps cover a three-kilometre radius around the indicated site location and may serve as a useful first step in

identifying resources and resource uses in the area. The information represented on the CRIMs, however, is not necessarily exhaustive, as they only contain information already existing in government databases. These maps should not be used as the sole source of local resource information.

4.1 Terrestrial wildlife habitat

Identify, then provide information on:

- nearby habitat areas used extensively by terrestrial wildlife; and,
- critical habitat required by Red- or Blue-listed terrestrial species.

Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary.

Clarification

"Used extensively" refers to areas that are regularly used by groups of animals to carry out essential life

processes such as breeding, staging and foraging. Areas that are used on a transitory basis or by only a few individuals are generally not of concern.

"Critical habitat" means the habitat that is necessary for the survival or recovery of a Red- or Blue-listed wildlife species, and that is identified as such in a provincial recovery strategy or action plan for that species. Critical habitat requirements vary, depending on the species and its specific life-history strategies and behavioural characteristics. "Red-listed species" are any indigenous species or subspecies that have an extirpated, endangered, or threatened status, or are candidates for such status. "Blue-listed species" are any indigenous species or subspecies considered to be vulnerable and therefore, of special concern because of characteristics that make them particularly sensitive to human activities or natural events. (Source: B.C. Conservation Data Centre)

A full listing of Red- and Blue-listed species in British Columbia may be accessed on the province's Conservation Data Centre Web site (see below for Web site).

Advice: Applicants may consult the CRIMs as these identify some eagle nesting sites and Red- and Blue-listed species habitat. CRIMs should not be used as the only source for this information as they are not necessarily exhaustive.

Applicants may contact MWLAP habitat staff for further clarification and for assistance in identifying wildlife habitat. More information on completed national wildlife recovery plans can be found at: http://www.cws-scf.ec.gc.ca/index_e.cfm.

Recommended government staff contacts:

- MWLAP – Senior Habitat Protection Officer
- Conservation Data Centre – see the following Web site for contact information: http://srmwww.gov.bc.ca/cdc/index.htm.

4.2 Migratory bird habitat

Identify, then provide information on nearby areas used by migratory birds for breeding, foraging and staging. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the proposed tenure boundary.

Advice: Check the CRIMs for any known bird colonies. Canadian Wildlife Service staff may also be of assistance with regard to identifying migratory birds and their habitat. Site visits may yield additional results.

Recommended government staff contacts:

- DFO – Area Habitat Management Biologist
- Canadian Wildlife Service – Environmental Assessment Officer
- Conservation Data Centre – see Web site for contact information: http://srmwww.gov.bc.ca/cdc/index.htm.

4.3 Freshwater streams

Identify, then provide information on nearby streams. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary. Follow the stream survey procedure described in section 5 of this guide.

Advice: Contact DFO Habitat and Enhancement Branch (HEB) for information on federal policies for siting near streams.

4.4 Fish and marine mammal habitat

Identify, then provide information on nearby fish and marine mammal habitat areas. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary.

Advice: The following are examples of habitat types that should be identified:

- eelgrass, surfgrass or kelp beds;
- geoduck beds;
- rocky reefs;
- areas used by eulachon;
- intertidal salt marshes;
- marine mammal haul-outs, migratory areas or feeding areas (e.g. shoreline areas regularly used by groups of seals or sea lions);
- habitat that supports populations of rare, threatened or endangered marine species; and,
- rare or unique habitats.

Check the CRIMs in order to identify any mapped seal haul-outs or Red- and Blue-listed marine species habitat. In addition to consulting CRIMs, applicants must visit the site in order to confirm these locations and to identify any fish or marine mammal habitat not identified on CRIMs. Include all relevant features identified through maps and site visits on the Local Resource Map.

A full listing of Red- and Blue-listed species in British Columbia may be accessed on the province's Conservation Data Centre Web site at: http://srmwww.gov.bc.ca/cdc/index.htm. This resource may assist in verifying the status of wildlife observed near the site.

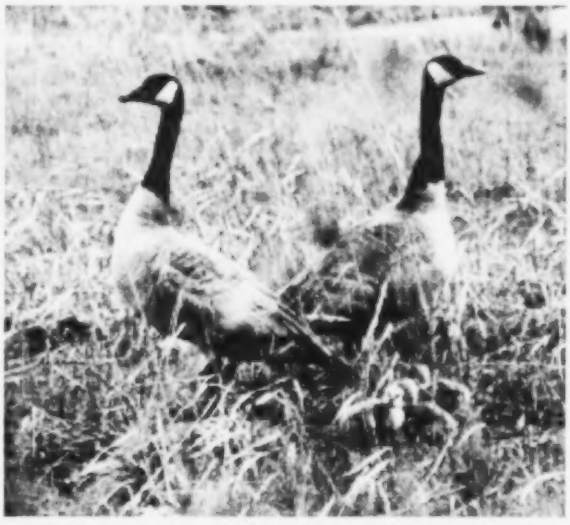
The federal Policy for the Management of Fish Habitat (including the "hierarchy of preferences" policy) is available online at: http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/legislation-lois/policies/fhm-policy/index_e.asp.

The DFO Guidelines for Conducting Marine Environmental Assessments for Finfish Aquaculture Projects are available from HEB.

Federal listings of rare, threatened and endangered species, as identified by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), can be found online at: www.cosewic.gc.ca/eng/sct5/index_e.cfm.

4.5 Herring spawn areas

Identify, then provide information on nearby herring spawn areas of "vital, major or high importance." Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary. Provide information on the last known herring spawn to have occurred in the area.



Advice: DFO has ranked and classified herring spawning habitat according to the long-term frequency and magnitude of spawns experienced along each kilometre of coastline. The resulting classifications (vital, major, high, medium, low, minor) represent relative habitat sensitivity. Areas with a "vital" classification, for example, comprise the top five per cent of all ranked herring spawn areas, "major" areas comprise the next 10 per cent, and so on.

Applicants may consult the CRIMs as an initial check for herring spawning data. This data is considered a reasonable indicator of spawning activity and is accurate to the nearest kilometre.

Applicants may also consult DFO's herring information online at www-sci.pac.dfo-mpo.gc.ca/herring/bulletin.htm to review maps and records of herring spawning. Contact the DFO habitat biologist for the area under consideration in order to confirm whether any additional data are available.

Additional research and consultation with DFO, First Nations and local fishers may yield information.

4.6 Intertidal bivalve shellfish beds and shellfish aquaculture operations

Identify, then provide information on nearby intertidal bivalve shellfish beds and commercial shellfish aquaculture operations. Applicants are advised to undertake qualitative surveys in order to determine the presence or absence of shellfish beds (or culture operations). Indicate these on the Local Resource Map to a minimum distance of one kilometre from the proposed tenure boundary.

Advice: Applicants may consult the CRIMs. The shellfish data on the CRIMs represent a compilation of data from three sources: the provincial Clam Atlas (covering only the south coast of BC), digital provincial shellfish capability data, and local knowledge. Applicants may also contact local fishers, First Nations, DFO staff or Shellfish Management Biologists or the MAFF Shellfish Biologist in Courtenay. Applicants should also visit the site in order to confirm these locations and to identify the presence of any other intertidal beds.

The MAFF office in Victoria may be able to provide a GIS file of shellfish aquaculture tenures, upon request, to those applicants who have access to GIS software.

4.7 Other aquaculture operations including marine finfish farms

Identify, then provide information on nearby aquaculture operations including marine finfish farms. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary. Applicants are also required to identify aquaculture operations located up to three kilometres from the proposed tenure boundary. If any aquaculture operations are located outside the scope of the Local Resource Map (one kilometre from the proposed tenure boundary) but less than three kilometres away, provide a written description of their location.

Advice: Applicants may contact other aquaculture companies and/or consult the CRIMs in order to identify nearby farms. Electronic files of the CRIM data may be obtained from MSRM.

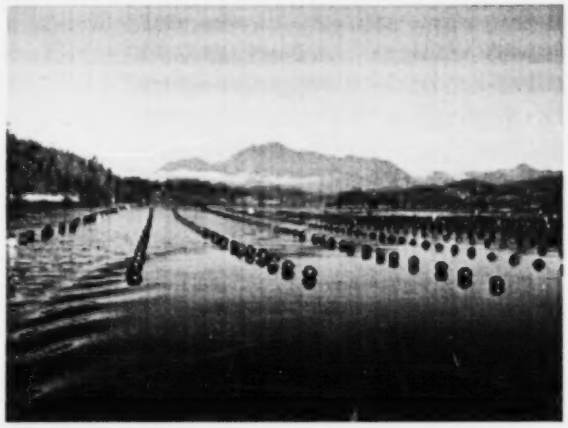
The MAFF "Aquaculture Wizard" online tool can be used to identify the locations of existing aquaculture facilities in B.C. This can be accessed at: www.fishwizard.com/aqua/index.asp. MAFF also maintains a list of all licensed finfish aquaculture facilities. This list is available from the MAFF Courtenay office.

DFO guides to cumulative effects assessment are accessible online:

- Addressing Environmental Cumulative Effects at: www.ceaa.gc.ca/0011/0001/0008/guide1_e.htm; and,
- the federal policy on "Addressing Cumulative Environmental Effects under CEAA" at: www.ceaa.gc.ca/0011/0002/cea_ops_e.htm.

Land and Resource Management Plans (LRMP) may also be in effect in the proposed site area, potentially affecting the application. Updates and contact information are available on the MSRM Web site. Contact the Coastal and Marine Planning Office at MSRM for information specific to LRMPs and aquaculture.

4.8 Harbours, wharves, docks and anchorages



Identify, then provide information on any harbours, wharves, docks and designated anchorages in the area. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the proposed tenure boundary.

Advice: Designated anchorage areas, harbours, wharves and docks are all marked on Canadian Hydrographic Service charts, and are published in the B.C. Coast Sailing Directions (two volumes – North and South coast). "Notations of Interest" and "Land Reserves" related to navigation under the Land Act are marked on cadastral maps, available from LWBC.

Information on obtaining Canadian Hydrographic Service marine charts and the BC Coast Sailing Directions is available from the Canadian Hydrographic Service Web site at: http://www.chs-shc.dfo-mpo.gc.ca/chs/en/. This material is also readily available from boating and commercial fishing supply retailers.

During the review process, applications will be reviewed by the CCG's Navigable Waters Protection Division to ensure that the proposed facility will not pose a risk to navigational safety. Applicants are advised to contact the CCG for further guidance if any harbours, wharves or docks are located near the proposed facility.

Consult the CCG's Navigable Waters Protection Act: Application Guide for Aquaculture Projects in Canada. This document can be accessed on the CCG Web site. Contact DFO's Navigable Waters Protection Officer for further information.

Cadastral maps showing Notations of Interest and Land Reserves under the Land Act are available from LWBC.

4.9 Privately-owned upland property

Identify nearby privately-owned lots. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary.

Applicants may be required to obtain written consent from an upland owner whose property directly fronts the proposed tenure location. If applicable, include a copy of the letter of consent in the application binder under **Tab 4**. More information is provided below.

Background

The following guidelines are derived from the LWBC Aquaculture Policy and are used to determine whether infringement of riparian rights is likely to occur:

"Where a tenure is located above or contiguous to the mean ordinary low-water mark (i.e. over or directly adjacent to the foreshore) and improvements are proposed that restrict access, the applicant must obtain the written consent of the upland owner for the proposed use and duration of the tenure.

"Where a tenure is located below the mean ordinary low-water mark, written consent of the upland owner should not be required provided that:

- the upland owner has access to and from deep water in a boat of reasonable size (12-metre guideline) from every point along his or her shoreline over every part of the adjacent foreshore;
- the improvements on the tenure will not constitute a hindrance to public navigation pursuant to the federal Navigable Waters Protection Act; and,
- that the upland owner will not be in a position to claim special damages (i.e. damages which could arise from extraordinary circumstances) as a result of the location of the tenure."

Recommended Activities: Applicants may obtain 1:20,000-scale TRIM maps with cadastral and surveyed lot information from LWBC. A field visit is recommended to confirm the locations of nearby residential or commercial lots.

Under provincial policy, written consent from an upland owner applies for the entire duration of the tenure. When applying for replacement of an expired tenure, holders may be required to obtain a new written statement of consent, regardless of whether or not the upland property has changed hands.

Advice: LWBC refers to two documents for guidance on tenuring for aquaculture projects: the LWBC Aquaculture Policy and the manual entitled "Riparian Rights and Public Foreshore Use in the Administration of Aquatic Crown Land." These documents are available online at: http://lwbc.bc.ca/applying_for_land/aquaculture.htm.

MSRM maintains a Land and Registries Portal Web site that provides access to major land and resource registries within government, and across all ministries. It provides information on land titles, Crown lands and resource registries, and provides links to other provincial resource-related Web sites. The portal can be accessed at: http://srmwww.gov.bc.ca/sstu/portal.

The MSRM Surveyor General Branch provides professional advice on a variety of survey and boundary-related issues, including boundary disputes, boundary determinations, interpretation of survey and tenure records, and determination of natural boundaries. This Web site can be accessed at: http://srmwww.gov.bc.ca/sgb/.

The Land Act and the Land Title Act can be accessed online at:

- www.qp.gov.bc.ca/statreg/stat/L/96245_01.htm (Land Act)
- www.qp.gov.bc.ca/statreg/stat/L/96250_00.htm (Land Title Act).

4.10 First Nations information

Identify any First Nations' reserves located within one kilometre of the proposed tenure boundary and indicate these on the Local Resource Map.

Also provide information on nearby areas or features of food, social or ceremonial importance to First Nations and indicate these on the Local Resource Map.

Advice: Applicants should refer to Section 3 of this guide for more information on siting with respect to First Nations.

4.11 Sites of cultural, heritage or archaeological significance

Identify then provide information on nearby sites of cultural, heritage or archaeological significance. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the edge of the proposed tenure boundary.

Advice: Applicants may contact the Archaeology and Registry Services Branch of MSRM to initiate a search that will identify possible cultural or heritage areas. This search is started automatically when an application is reviewed by the branch. However, applicants may elect to initiate this search in order to expedite this process. If the area has not been surveyed, applicants may be required by the branch to enlist the services of a professional archaeologist to conduct an Archaeological Impact Assessment of the area. Applicants will be contacted by the branch if this step is required.

If the presence of archaeological resources is suspected, applicants may wish to have an Archaeological Impact Report completed by a

professional archaeologist. If so, this report should be included under **Tab 4** of the application package. This step is not mandatory.

Contact the Archaeology and Registry Services Branch for information regarding site inventory, evaluation and assessments, or, information on archaeological sites in B.C.

4.12 Parks, ecological reserves and protected areas

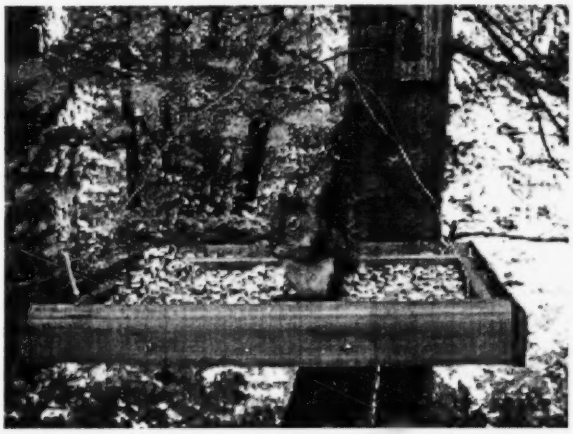
Identify, then provide information on nearby federal, provincial or regional parks or ecological reserves. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the proposed tenure boundary.

Advice: Consult any of the sources below for more information and for locations of protected areas.

- CRIMs or other maps can be used to verify the locations of nearby parks.
- Lists and maps of all provincial and federal parks in B.C. can be found on the BC Parks (http://wlapwww.gov.bc.ca/bcparks/) and Parks Canada (http://www.parkscanada.gc.ca/index_e.asp) Web sites.
- A downloadable GIS file (in ARC/Info™ export format) of protected areas in B.C., including cabinet-approved study areas is on the MSRM ftp site (use the file named qppa_bc.e00 at ftp://ftp.gis.luco.gov.bc.ca/pub/pas/parks/).
- Contact BC Parks or the MSRM Resource Management Division (formerly LUCO) for further information on parks and approved study areas in B.C.

4.13 Other development features

Identify then provide information on nearby development features. Indicate these on the Local Resource Map to a minimum distance of one kilometre from the proposed tenure boundary. Development features may include, but are not limited to, the following:



- regularly used recreational areas and tourism features;
- logging operations (includes sorting, booming, dumps, drops etc.); and,
- sources of potential pollution/contamination (e.g. outfalls, roadways, processing facilities).

Advice: Information on surveyed lots, including privately-owned land and Crown land tenures, can be found on TRIM maps. Applicants may obtain 1:20,000-scale TRIM maps with cadastral and surveyed lot information from LWBC. A field visit is recommended to confirm the locations of nearby residential or commercial lots.

In addition to consulting CRIMs, applicants must visit the site in order to confirm these locations and to identify social resources and features not identified on CRIMs or TRIM maps.

MSRM maintains a Land and Registries Portal Web site that provides access to major land and resource registries within government, across all ministries. It provides information about land titles, Crown lands and resource registries, and provides links to other provincial resource related Web sites. The portal can be accessed at: http://srmwww.gov.bc.ca/sstu/portal.

Further information on nearby social resources and features, such as tourism resource inventories, may be available from MSRM. Consult the MSRM home page at: www.gov.bc.ca/srm/.

5
Stream surveys

All streams found within one kilometre by water from the proposed tenure boundary and that enter the ocean must be assessed for presence of anadromous fish and habitat values using the procedure described below.

Minimum requirements

Sampling and recording procedures have been established by the Resources Information Standards Committee (RISC). These sampling procedures should be followed generally, with consideration for the following guidelines:

Survey objectives

- Map all streams located within one kilometre by water from the proposed tenure boundary, to confirm the locations of mapped streams, and to identify any streams which have not already been mapped.
- Determine the presence or absence of anadromous salmonids in each stream at a time of year when they are most likely to be present.
- Identify the habitat types present, and quantify the amount of each habitat type found within each stream.

Guidelines for surveying streams

- Sampling activities should start from the stream mouth and work upstream until an impassable barrier is encountered.
- If the stream has an obvious barrier to anadromous species (e.g. a waterfall) the survey can be terminated at that point. Detailed information regarding these barriers (composition, size, location, etc.) must be submitted along with labelled photographs of the barriers.
- Professional judgement is to be employed in designing the sampling procedure for each stream in order to ensure thorough sampling that captures appropriate species with appropriate gear and at appropriate sampling times. Although the RISC standards are generally suitable for the purpose of this sampling program, some modifications may be acceptable depending on the size and/or nature of the streams in question. Applicants may contact DFO habitat biologists in order to confirm a suitable approach.
- Surveying must be undertaken by a qualified professional[1] and during the time(s) of year when anadromous salmonids are expected to be present. Applicants are advised to contact DFO area habitat biologists to confirm the appropriate sampling window prior to commencing fieldwork. All survey methods, dates, and equipment used must be fully documented in a stream survey report.

[1] Field surveys for fish-stream identification must be designed and carried out by qualified and experienced personnel who have practical, field expertise, or who have received training in fish sampling techniques and fish species identification. Persons trained to the level of expertise necessary for these surveys most commonly include biologists, biological technicians and environmental technicians.

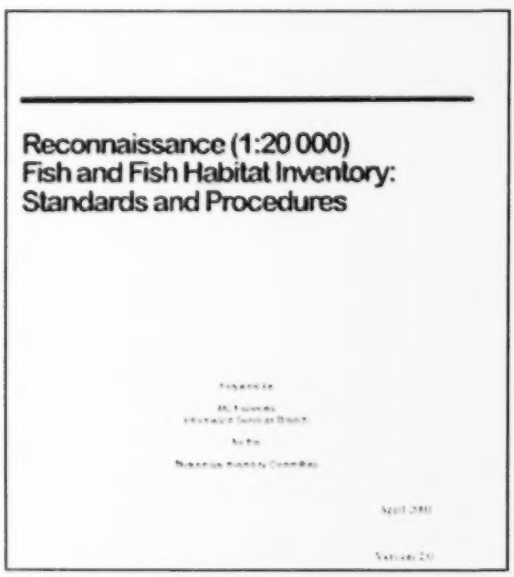
Indicate the location of streams and the presence/absence of anadromous fish on the Local Resource Map described in section 4. Submit all methodology and survey results in a written report under **Tab 5** of the application binder.

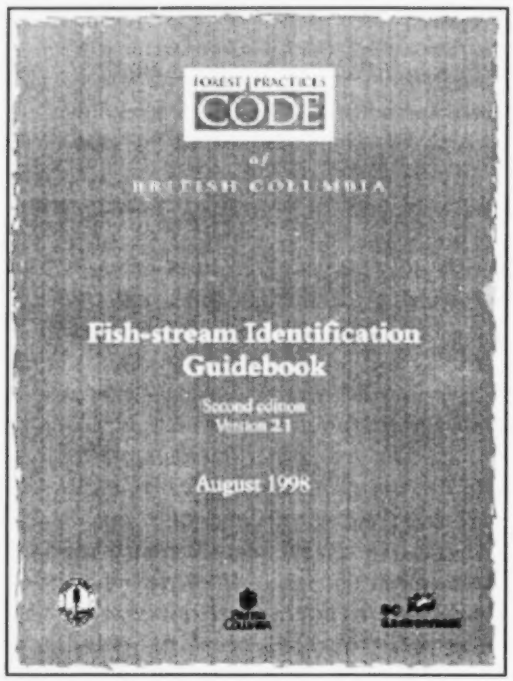
Known data on fish and fish habitat

Information may already exist indicating the fish-bearing status of streams in the area. Most confirmed fish presence information has been compiled into the joint MWLAP-DFO Fisheries Information Summary System (FISS). However, the applicant must seek additional information from sources that may not have been included in the FISS, or information that is more current than FISS. Projects now underway may be listed in the Fisheries Project Registry (FPR). Contact the MWLAP Fisheries Inventory Specialist for the region in question for more information on the status of FISS or the FPR for the area.

Additional resources and contact information

The relevant RISC document is the Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures Version 2.0 (Chapter 4). This document is available online at: http://srmwww.gov.bc.ca/risc/pubs/aquatic/index.htm.





Fisheries and Oceans Canada HEB staff may be contacted regarding stream surveying and federal siting policies. MWLAP regional Fisheries Inventory Specialists may be contacted for the most recent known fish stream information.

General information on the habitat preferences and seasonal patterns of Pacific salmon may be available from DFO. Contact HEB for more information.

The Forest Practices Code Fish-stream Identification Guidebook may be a useful reference tool and is available on the Ministry of Forests Web site at: www.for.gov.bc.ca/tasb/legsregs/fpc/FPCGUIDE/FISH/FishStream.pdf.

FISS and FPR information is available through 'Fish Info BC' on the MAFF Web site at: www.bcfisheries.gov.bc.ca/fishinfobc.html.

6

Seabed and marine habitat characterization

NOTE: timing options exist for completing this section - see below for details

Background

MWLAP has developed protocols for baseline sampling under the Finfish Aquaculture Waste Control Regulation. All new facilities must be monitored in accordance with these protocols before the operator may apply for registration under this regulation. This registration is required before the facility may by stocked with fish.

Physical and biological data gathered under this sampling program will serve as a visual and quantitative record for comparison with measurements made after operation has begun and to determine if the site is operating in accordance with the regulation.

Consistent with the direction provided under the Finfish Aquaculture Waste Control Regulation, **submission of the baseline monitoring data is not required until after the site has been approved for operation** by the relevant provincial and federal authorities. Applicants may choose whether to complete this sampling up front and submit it with the site application or to submit it later. In any case, **MWLAP must receive the baseline monitoring data before the site may be stocked with fish**.

Note: Although this section virtually mirrors the requirements of MWLAP's Finfish Aquaculture Waste Control Regulation, the protocols for baseline sampling in Schedule A of the regulation may be adjusted over time. Therefore, the regulation and associated protocols remain the final authority on conducting the baseline sampling required for registration. **Consult the regulation in order to ensure that the most up-to-date version of the sampling protocols are used**.

DFO also has requirements for environmental/ habitat sampling which may differ from the MWLAP requirements. Results of the DFO-required sampling will inform the federal adjudication of applications and so **are usually required with the site application**. Details on the federal sampling program are available from DFO. Applicants should contact that agency in order to obtain the latest federal guidelines for finfish aquaculture site sampling.

Minimum requirements

MWLAP baseline survey

Prior to commencing this survey, applicants should:

- identify the probable footprint(s) of the proposed cage array(s) and describe how this (or these) were derived - for example, computer modeling, extrapolation from biophysical monitoring at the site, judgment by a qualified professional, etc.; and,
- identify two locations for use as reference stations that have depths, substrata and other features similar to those found within the tenure area.

The survey must be designed and conducted to meet the following objectives:

- characterize the bottom substrates, habitat types, and species found throughout the tenure and at two reference stations;
- describe the variation in substrata, topography and bathymetry throughout the tenure and at two reference stations;
- determine the feasibility of collecting sediment grab samples; and,
- identify any areas that will require video surveying for operational monitoring.

Submitted baseline survey information may include, but is not limited to:

- a written report characterizing the seabed and marine habitat;
- maps/diagrams showing seabed and marine

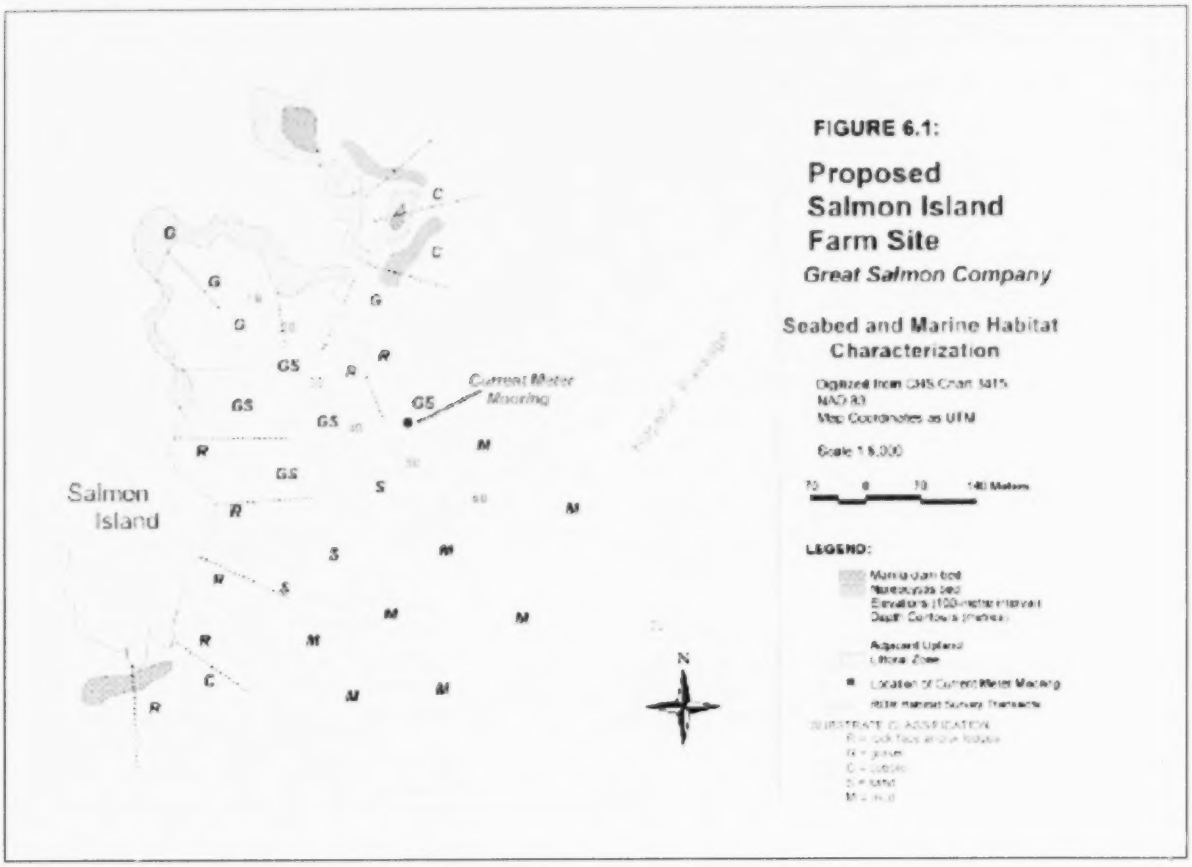


Figure 6.1 Example: seabed and marine habitat characterization map

habitat characteristics relative to proposed farm structures and tenure boundaries;
- video footage of habitat observations;
- tables of species and habitat observations; and,
- still photographs.

The above information is a consolidated summary of MWLAP's baseline sampling requirements. Further details on the procedures for conducting this sampling are provided in Schedule A of the Finfish Aquaculture Waste Control Regulation and the associated Protocols for Marine Environmental Monitoring.

Submission Timing Options

Applicants are advised that completing and submitting all baseline and environmental sampling data (MWLAP and DFO requirements) with the site application will likely expedite government's review and reduce the overall time and cost required for data collection. Nevertheless, applicants may choose between the following timing options:

- submit the federal sampling results with the site application (provided this is consistent with DFO's sampling requirements) and submit the provincial baseline data later, before stocking the site; or,
- submit results of both the federal and the provincial sampling programs with the site application for concurrent review.

Any relevant baseline/environmental sampling data to be considered as part of the application should be included under **Tab 6** of the application binder.

7
Weather and oceanographic information

7.1 Climate and water conditions

Minimum requirements

Provide the following information for the site area, and indicate the source(s) used to obtain this information.

Climate
- maximum anticipated/recorded wind speeds at the site during summer and winter
- predominant wind directions during summer and winter and associated fetch
- estimated maximum wave height
- susceptibility to icing during winter months

Water
- range of depths (relative to chart datum) found within the proposed tenure area
- minimum water depth at the proposed cage location(s)
- minimum separation at low tide between the bottom of the net cages and the seafloor

Submit this information under **Tab 7** in the application binder.

7.2 Thirty-day current metering

The minimum requirements for collecting and reporting current data are described below. These requirements mirror the protocols prescribed under the Finfish Aquaculture Waste Control Regulation. For additional details, refer to this regulation and the related document Protocols for Marine Environmental Monitoring (WLAP 2002), available from MWLAP and on the MWLAP Web site.

Minimum requirements

Measure currents at two depths: approximately 15 metres below the surface and approximately five metres from the bottom.

Report current speed in centimetres per second (cm/sec) and direction in degrees true (indicate magnetic north reading and correction factor). Record current speed and direction at least once every 30 minutes over a period of at least 30 days.

At sites where infrastructure has not yet been installed, metering locations should be representative of currents found within the tenure area, especially near containment structures. At sites with infrastructure in place, current meters should be deployed near the cage structures – but in a location where water-flow past the meter is not affected by the presence of the facility's structures. In most cases, a location about 30 metres from the offshore side of the structures is appropriate.

All readings from the current meter are to be maintained in an electronic file for future reference.

The following data sets must be provided for both depths:
- electronic files of the raw data, indicating current velocity and direction for each sampling interval; and,
- hard copies of summary data, presented in tabular frequency distribution and including meta data (see example provided).

Data submissions

The following descriptive information must be included with both the raw data and the data summaries.

Current meter moorings and deployment locations

Applicants must provide a diagram showing how the current meters were deployed. Indicate the following in the diagram:
- the type and position (surface or sub-surface) of flotation devices used to support the current meters during deployment;
- the distances between the current meters and the flotation;

- the type and weight of the anchor used; and,
- a description and illustration of any other components/instruments attached to the mooring (e.g. mechanical or acoustic releases).

Supply dGPS coordinates of the deployment locations and a written description of the locations (e.g. 30m at 270° from the southwest corner of the containment structures); indicate the deployment location on a map. The seabed map submitted under Section 6, the Local Resource Map submitted under Section 4, or a 1:20,000 scale BCGS map may be used. Indicate whether dGPS coordinates and maps are in NAD 27 or NAD 83.

A completed current meter deployment diagram and form are provided below as examples. Blank copies may be obtained by contacting MAFF.

Current data tables and meta data

In addition, provide the following meta data for both current meter locations. This information may be included with the current data tables, as shown in the example provided.

Start date and time

Indicate time as either Pacific standard time (UTC-8) or Pacific daylight time (UTC-7).

End date and time

As above.

Instrument

The make and model of the meter(s) used, including a copy of the manufacturer's specifications, and date of last calibration and servicing.

EXAMPLE

CURRENT SPEED/DIRECTION TABLE

Site name: John's Point
Location: 49°40'29" 1 26°20'57"
Instrument: Aanderaa model # 12345

Description: 30m 270° from SW corner of net pens
Start date/time: 13:42 (PST), 12 Sept. 97

Depth of Meter: 15m
End date/time: 08:02 (PST) 10 Oct 97
Data (circle one): averaged over interval OR instantaneous

Number of data points: 1353

Sample interval: 30 minutes **Water depth**: 60m

Average current speed (cm/s): 3.0

Contact name: John Noname of JN Consultants, Sidney, BC (250) 555-5555

	Current Speed (cm/s)											
Bearing (°)	0-1	1.1-2	2.1-3	3.1-4	4.1-5	5.1-6	6.1-7	7.1-8	8.1-9	9.1-10	10+	% of data at each bearing
0-15	15	8	2	1	0	0	0	0	0	0	0	2.6
15-30	11	6	9	4	1	1	0	0	0	0	0	2.4
30-45	17	5	0	0	0	0	0	0	0	0	0	1.6
45-60	17	10	1	2	0	0	0	0	0	0	0	1.5
60-75	18	6	0	1	0	0	0	0	0	0	0	1.8
75-90	10	13	2	0	1	0	0	0	0	0	0	1.8
90-105	40	37	9	0	1	0	0	0	0	0	0	6.4
105-120	36	44	16	1	1	0	0	0	0	0	0	7.2
120-135	30	23	13	2	1	1	0	0	0	0	0	5.2
135-150	34	16	6	1	0	0	0	0	0	0	0	4.2
150-165	35	39	9	1	0	0	0	0	0	0	0	6.1
165-180	19	19	5	0	0	0	0	0	0	0	0	3.2
180-195	29	27	3	2	0	0	0	0	0	0	0	4.5
195-210	37	25	5	0	0	0	0	0	0	0	0	5.0
210-225	21	17	2	0	0	0	0	0	0	0	0	3.0
225-240	23	24	2	0	0	0	0	0	0	0	0	3.6
240-255	29	27	1	0	0	0	0	0	0	0	0	2.7
255-270	28	28	3	1	0	0	0	0	0	0	0	4.4
270-285	29	29	17	11	8	3	2	1	1	0	0	7.5
285-300	35	34	15	17	6	3	1	1	0	1	0	8.4
300-315	28	36	8	4	0	0	0	0	0	0	0	5.6
315-330	24	12	9	0	0	0	0	0	0	0	0	3.3
330-345	24	16	0	0	0	0	0	0	0	0	0	3.0
345-360	24	7	0	0	0	0	0	0	0	0	0	2.3
% of data in each speed interval	45.2	37.8	10.7	3.6	1.5	0.6	0.2	0.1	0.1	0.1	0.0	100.0

* Note: Choose a range of current speeds for the table that captures only the range of measurements observed at the site. In some cases, it may be necessary to use smaller increments in order to span a range smaller than that shown in this sample table. A total of 10-12 increments is recommended.

* Numbers indicate the number of observations recorded in each direction/speed increments is recommended.

Figure 7.1 Example: current speed/direction table

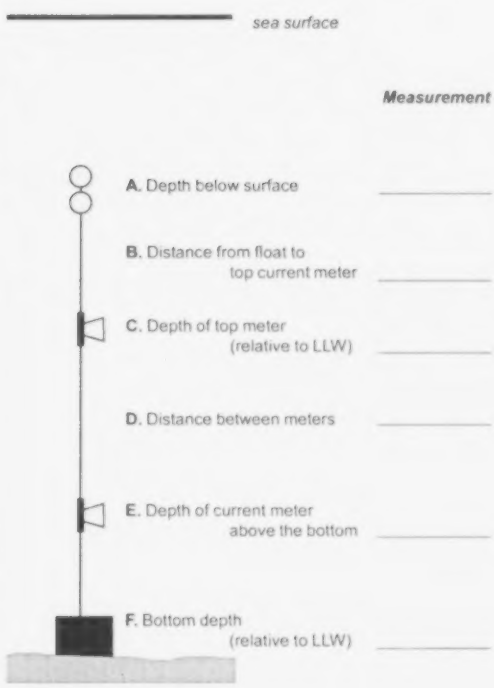
Number of data points
The actual number of instantaneous or average measurements recorded by the meter. If measurements are taken every 30 minutes, there will be approximately 1400 measurements in the monitoring period. This number assists in calculating averages.

Sample interval
Minutes between consecutive measurements made by the meter. Interval must not be greater than 30 minutes.

Data processing and reporting
Describe the data processing methods and software used to correct and process the current meter data. Indicate whether current directions were recorded in degrees true (recommended) or in degrees magnetic. Indicate whether the meter records average or instantaneous measurements and describe the instrument's set up or configuration. If the meter records average measurements, indicate the averaging interval.

Depth of meter
Report the depth or the distance from the bottom when fully deployed.

Current meter mooring diagram


sea surface
Measurement
A. Depth below surface
B. Distance from float to top current meter
C. Depth of top meter (relative to LLW)
D. Distance between meters
E. Depth of current meter above the bottom
F. Bottom depth (relative to LLW)

Name of Individual/Company Completing Assessment

Top Current Meter Manufacturer and Model:
Serial Number:
Last calibration date:
Last service date:

Bottom Current Meter Manufacturer and Model:
Serial Number:
Last calibration date:
Last service date:

Deployment Date: ____ Time: ____
mm dd yy pst / pdst

Recovery Date: ____ Time: ____
mm dd yy pst / pdst

Mooring Location:
NAD-27 ☐ latitude:
NAD-83 ☐ longitude:

Sampling Interval:
instantaneous ☐ ____ *minutes*
averaging ☐ ____ *samples*

Subsurface Floatation:
Description:
Flotation: ____ *kg*

Anchor:
Description:
Flotation: ____ *kg*

Mooring Materials Description:
location of swivels (indicate on adjacent diagram)
type of line:
method of recovery:
other:

NOTE: if meter(s) were deployed in a way other than that of a standard sub-surface mooring, please provide an appropriate description of materials and configuration of the meter(s).

Figure 7.2 Current meter mooring diagram

Water depth
At location of deployment.

Average current speed
Provide the average current speed for the entire data collection period (30 days). Calculate from the full data set, not from the summary data.

Contact name
Name and contact information of the staff person or consulting company responsible for collecting and reporting current measurements.

Submit all current information under **Tab 7** of the application binder.

Additional resources and contact information

This section mirrors the requirements of the provincial Finfish Aquaculture Waste Control Regulation and the Protocols for Marine Environmental Monitoring (2002), Section 2.

Questions regarding the current metering requirements may be directed to the MWLAP aquaculture biologist within the Pollution Prevention branch or to MAFF aquaculture staff in Courtenay.

7.3 Water quality information

Minimum requirements

- Provide the annual range of water temperature, salinity, and dissolved oxygen levels measured at the surface. Indicate the time(s) when these measurements were obtained, and the months when maximum and minimum measures of each parameter occur.
- Describe any known history of toxic bloom events at the site, including the frequency and severity of blooms.
- Identify and describe any potential sources of pollution in the vicinity of the site, with reference to any pollution sources identified on the Local Resource Map (Section 4).

Submit this information under **Tab 7** in the application binder.

Additional resources and contact information

Suggested sources for obtaining this information include weather stations, airports, lighthouses, Canadian Hydrographic Service marine charts, the Canadian Coast Guard or aquaculture operations in the area.

Contact the MAFF Courtenay office and/or the Canadian Coast Guard for further information.

8
Water licensing and access to freshwater

Minimum requirements

A water licence may be required if the proposed facility requires access to surface water for domestic or commercial use. Where applicable, applications for both a water licence and a tenure application for the same site will be reviewed concurrently by LWBC.

Provide the following information on accessing water for use on the site:

- a description of the source, supply and method of accessing freshwater (stream surveys as described in Section 5 must also be conducted);
- an indication of the fish-bearing status of the freshwater source;
- a description of any potential impacts to fish habitat for assessment by DFO staff;
- a description of where, when, and how the water intake will be installed, including any measures planned to minimize or prevent impacts to fish habitat during installation and operation (include a description of the screening that will be put in place to prevent entrapment of fish); and,
- a completed Application Form for Crown Land and Water Licence (if applicable). See below for contact information.

Submit this information under **Tab 8** in the application binder.

Additional resources and contact information

Water licence application and amendment forms are available from LWBC at: http://lwbc.bc.ca/water/general/applying.html. The Water Licensing Web site, which includes general information on water licensing and legislation can be found at: http://lwbc.bc.ca/water/surface.html. The provincial Water Act can be viewed online at: www.qp.gov.bc.ca/statreg/stat/w/96483_01.htm.

Note: Applicants must contact the DFO Area Habitat Biologist if the proposed site presents any potential for disruption of stream habitat.

Contact the DFO area habitat biologist with any questions regarding stream surveying and fish habitat. Complete text of the DFO "Freshwater Intake End-of-Pipe and Fish Screen Guideline" can be found at: www-heb.pac.dfo-mpo.gc.ca/publications/pdf/guidelines/fishscreen_intake_e.pdf.

9
Domestic wastes

Minimum requirements

Provide a brief description of waste handling practices at the facility. Include a description of the methods and locations for holding, treating and disposing of domestic waste water, domestic wastes (i.e. garbage) and fish mortalities, and identify the nature and location of their disposal facilities.

Further information

According to MWLAP's Finfish Aquaculture Waste Control Regulation, an operator must ensure that domestic sewage produced from the facility complies with the following requirements:

- the maximum daily discharge rate does not exceed 2.5 m^3/d;
- the domestic sewage is treated by a septic tank with a design retention time of not less than two days, or is treated by a device other than a septic tank with the concentration of total suspended solids in the effluent not exceeding 130 mg/L;
- the location of the sewage discharge point to the environment is at a depth no less than 15 metres below the surface of the water; and,
- all records related to the construction, operation and maintenance of sewage treatment and disposal works are retained for inspection by designated government staff.

Refer to the above referenced regulation as the definitive source for this information. The specific provisions of the regulation may change.

Land-based accommodations or facilities may be subject to different requirements if sewage is not discharged into the marine environment. Contact MWLAP for further information.

Additional resources and contact information

The Finfish Aquaculture Waste Control Regulation is available online at:
www.qp.gov.bc.ca/statreg/reg/W/WasteMgmt/256_2002.htm.

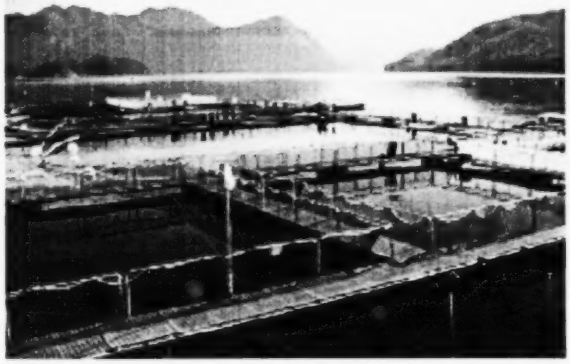
10
On-site construction and materials

Minimum requirements

Provide details of all construction that will take place on site (if applicable).

- Describe any materials and chemicals that will be used in the construction process.
- Describe when and where construction will occur.
- Identify and describe how any proposed construction work (including materials of substances used in construction) may affect fish habitat.

Submit this information under **Tab 10** of the application binder.



11
Site history

Minimum requirements

Provide any information regarding previous use(s) of the site. If the site has previously been used for any industrial activity, including aquaculture, provide a history of this use, including (if known):

- type of use;
- duration;
- previous location(s) of improvements;
- possible impacts to the local environment; and,
- available environmental data, etc.

Submit this information under **Tab 11** of the application.

Additional resources and contact information

Contact the MAFF Courtenay office as a first step in obtaining this information, as there may be existing data on file regarding previous site use(s). LWBC may also be able to provide history on other uses under previous Crown land tenures.

12
Community and employment benefits

Minimum requirements

Outline the economic, employment and other community benefits that will or could result from approval of the application by completing LWBC's "Economic Benefits Questionnaire for Development of Crown Lands and Water." Additional material that may be included in this section are: letters of support, records of public consultation meetings, First Nation's Band Council Resolutions, or any other material supporting the application.

Include this material under **Tab 12** of the application binder.

Additional resources and contact information

Contact MAFF or see the MAFF Licensing Policy for further information.

13
Additional information (optional)

Any information not specifically addressed by other sections of this guide but deemed relevant by the applicant or requested by a government agency is to be included here. Potential submissions may include:

- Best Management Practices Plan(s);
- additional study results;
- additional site information; and,
- any other information required for, or relevant to, the application.

Conclusion

All required information as described in this guide should be assembled and presented in a professional manner in a binder with numbered separator tabs. Complete binders are to be sent to Land and Water B.C. at **Suite 501 - 345 Wallace Street, Nanaimo, B.C., V9R 5B6**.

Applicants must ensure that all required activities have been carried out and that all requested information is included in the binder. This will enable a timely review by government agencies. **Verify binder contents prior to submission by using the Site Application Checklist provided at the front of this guide**. Applicants may be contacted by government agencies should any uncertainties or inconsistencies arise regarding the components of an application.

Definitions of terms used in the guide

The following definitions are intended to provide clarification for commonly used terms in this document and are not presented as a set of legally defensible terms. Contact the appropriate government agency for further clarification on these terms.

Applicant: An individual or company who applies for a Marine Finfish Aquaculture site and facility by completing an application for submission to government.

Application (or Application Binder): A submission made to government to apply for a Marine Commercial Finfish Aquaculture site and facility. An application consists of a completed Management Plan and other supporting information consistent with the direction provided in the Application Key. The preferred format for a submitted application is a three-ring binder or spiral binding.

Aquaculture: The growing and cultivation of fish for commercial purposes, in any water environment or in human made containers of water.

Aquaculture Licence: A licence issued under Section 13(5) of the provincial Fisheries Act authorizing the operation of an aquaculture facility in British Columbia.

Aquaculture facility: An establishment where the business of aquaculture is carried on.

Bird nets: Predator netting that is stretched over the net pen to prevent birds from accessing fish or feed that is being dispensed.

BMP Plan: Best Management Practices Plan. A BMP Plan is a document written by fish farm operators that identifies how certain operational activities on the farm will be conducted in a manner that prevents and mitigates negative environmental impacts. More information is available in the Aquaculture Regulation and the Finfish Aquaculture Waste Control Regulation.

Bag cage: An enclosure made of impermeable material and used to contain fish.

Cage support system: Anchoring systems and floating structures that support net cages, bag cages, and ancillary equipment.

Containment structures: Net cages, bag cages, tanks, troughs, raceways, natural or human made ponds, trays and other structures used to contain fish for the purposes of aquaculture.

CRIM (Coastal Resource Inventory Map):	Maps containing information about known environmental resources and other land uses in a specific area. These maps are available from MSRM Decision Support Services unit for a nominal fee. Maps cover a three-kilometre radius around the indicated site location and may serve as a useful first step in identifying resources and resource uses in the area.
Crown land tenure:	A lease or licence of occupation issued under the provincial Land Act authorizing the occupation of provincial Crown land for a specific purpose.
District Lot Number:	A type of primary land division or description which defines a parcel of land that has been surveyed. Normally the District Lot Number is a unique numerical listing within a specific land district, for example, District Lot 1234 Cariboo District. District Lot Numbers may be numeric or alphanumeric, e.g. DL1234s SDYD.
Extensive (use) area:	The area of Crown land used for anchoring structures outside of intensive areas that do not impede navigation or access to lands beyond. See also "Intensive (use) Area."
Fish:	The whole or any part of an aquatic animal, including the eggs, sperm, spawn, larvae, spat, and juvenile stages.
Finfish:	Fish of the classes Agnatha, Chondrichthyes and Osteichthyes.
Fish habitat:	The spawning grounds and nursery, rearing, food supply and migration areas on which fish depend directly or indirectly in order to carry out their life processes. Source: Fisheries Act (Canada).
FCR (Feed Conversion Ratio):	A measure of how efficiently feed is converted to body weight, expressed as a ratio of feed input to body weight gained (for example, 1.4:1 means for every kilogram of harvested fish, 1.4 kilograms of feed was input). FCR may be expressed as "economic" (where the calculation describes only how efficiently the fish convert feed to body weight, without accounting for mortalities) or "biological" (accounting for losses through mortalities, often referred to as the Total FCR). The biological FCR is the measure required for input to the Detailed Production Table (see section 1 of the guide).
Footprint:	The area of the seabed on which there is a measurable accumulation of particulate wastes, or waste by-products, originating from a containment structure or a containment structure array and deposited by normal ocean currents. See also "probable footprint."

Grow-out period: The period of time elapsed from the time the first smolt of a cohort enters the water until the last fish of the same cohort is harvested.

Guide: The Guide to Information Requirements for Marine Finfish Aquaculture Applications. This document is produced by the provincial government and describes the information required from a person or company to apply for a new aquaculture licence and Crown land tenure, or renew one or both of these. See the introduction for further information on the purpose of this guide.

Harvest tonnage: The total round weight of fish harvested from a farm during a single grow-out period.

Improvements: Any additions or alterations to a Crown land tenure or physical structures that will temporarily or permanently occupy space on the tenure site required for the cultivation of a culture species. Improvements may include, but are not limited to, longlines, anchor lines, rafts, floats, barges, net pens, net cage arrays, vexar cover or fencing, docks, storage sheds or other buildings.

Intensive (use) area: The area of Crown land used for aquaculture activities and related improvements directly associated with the production of finfish, shellfish or marine plants. The intensive use area will include net cages, netting, float camps, net storage, docks and mort sheds as well as a 30-meter buffer around these structures. The 30-meter buffer is mandatory and is intended to cover the area where anchor lines are most likely to pose a restriction to navigation due to the scope and angle of lines closest to the structures. Outside of the 30-meter buffer the lines are generally at a suitable depth to allow safe passage of a boat; however, any anchor lines beyond the 30-meter buffer that restrict access or hamper navigation will also be included as part of the intensive use area.

Juvenile (fish): Fish that have not yet reached reproductive maturity.

Land district: A geographically defined area established pursuant to Section 2 of the Land Act for the purpose of administering the provisions of the Land Act.

Management Plan: The legal document that results from an applicant's completion of a Management Plan Form. A completed Management Plan details the operational specifications of an aquaculture facility, including the production levels and the nature of the improvements at the facility. Compliance with an approved Management Plan becomes a specific condition of an aquaculture licence and Crown land tenure.

Management Plan Form: The template provided to applicants by government to enable preparation of a site-specific management plan.

Marine engineer: A professional engineer hired by an aquaculture company to design and/or install improvements and containment structures at the aquaculture facility. The Association of Professional Engineers and Geoscientists of B.C. regulates and governs the profession under the authority of the Engineers and Geoscientists Act.

Maximum total production: The maximum tonnage (round weight) of all fish harvested within a specified grow-out period from an aquaculture facility.

Metes and bounds: A description of the length and directions of the boundaries of a lot or tenure, with reference to the nearest surveyed lot, staking notice or prominent land mark. For example:
"882m west of the west corner of DL 1498 (Deserters Is.), then 150m at 145.5°T then 600m at 240.5°T then 160m at 324T° and bound by the SE shoreline of Salmon Island."

Mooring protocols: The standards or practices employed in the design and mooring of the structures associated with an aquaculture facility.

Net anchors: Internal and external weights used to maintain pen volume and net tautness.

Net cage (also "net pen"): An enclosure made of netting used to contain fish.

Net cleaning station: A location where net cleaning activities take place.

Net washing barge: A mobile or stationary float where net cleaning takes place. The float may be equipped with net washing drums, crane, work shed, power-washers, etc.

Predator nets: Nets that are secondary to the net pen (i.e. not used primarily for containment of fish) creating a barrier to predators (e.g. seals and sea lions). Bird nets and shark guards are types of predator nets.

Probable footprint: The likely footprint associated with proposed locations of containment structures, or containment structure arrays (determined by using a method which satisfies the criteria in Schedule B of the Finfish Aquaculture Waste Control Regulation or by using an alternative method approved by MWLAP). See also "footprint."

Professional marine surveyor: A professional person with the academic qualifications and technical expertise to practice the science of measurement and to use that information for the purpose of planning the design and/or installation of improvements and containment structures at an aquaculture facility.

Qualified professional:	An individual employed or contracted by an aquaculture company who possesses the knowledge, expertise and experience necessary to complete the specific field work or analysis outlined in specific sections of the guide.
Rated mooring components:	Ropes, chains, shackles, rock pins, etc. for which the manufacturer has provided breaking strength specifications. With regards to chains and shackles, metals that are used in rated components are generally of sufficient nobility to reduce electrolysis.
Rocky reef:	A rock habitat comprised of a dominant macrophyte canopy supporting a diversity of fish and macro-invertebrate species assemblages.
Round weight:	The weight of the whole fish as it comes from the water before any treatments or dressing.
Shark guards:	Shallow box-shaped predator nets attached to the bottom of the net pen that create a space between the net pen bottom and predators (e.g. dogfish and sea lions).
Statutory decision-makers:	Individuals with delegated authority under provincial or federal statutes to issue licences, permits or authorizations.
Smolt:	The stage at which a juvenile salmonid is competent to enter seawater.
Staking notice:	A notice containing the applicant's name and address, the site being applied for by local name, the area of application, a metes and bounds description (including latitude and longitude), and the purpose of the application. A person intending to apply for a disposition of Crown land (i.e. tenure) is required under the Land Act to post a notice indicating his/her intention to do so at the intended location.
Supporting Information:	Information other than the Management Plan submitted as part of an application. The supporting information may include maps, diagrams, third-party reviews, and other descriptive information about the site area and proposed facility. The supporting information is submitted together with the Management Plan in the Application Binder.

Appendix A

Contact information[1]

Ministry of Water Land and Air Protection, Main Office, Victoria (250) 387-1161
Water, Air and Climate Branch, Victoria (250) 387-9933
Fisheries and Wildlife Recreation and Allocation Branch, Victoria (250) 387-9711
Aquaculture Biologist (250) 751-7245
Environmental Management Division (re: Hazardous Materials) (250) 387-9971
Fisheries Inventory Specialists (Victoria) (250) 387-9711; (Nanaimo) (250) 751-3217
Habitat Protection & Red/Blue listed species (250) 751-3227
Predator Species Information: (Victoria) (250) 387-9500 (Nanaimo) (250) 751-3100

Ministry of Agriculture, Food and Fisheries, Main Office, Victoria (250) 356-6252
Aquaculture Development Branch (250) 356-6252
Manager of Aquaculture (250) 356-7640
Manager, Shellfish Aquaculture Development (250) 356-2237
Courtenay office (Aquaculture Development Branch): (250) 897-7543 or (250) 897-7551
Aboriginal Negotiator/Analyst (250) 387-9575

Ministry of Attorney General and Responsible for Treaty Negotiations, Main Office, Victoria (250) 356-8281
Treaty Negotiations Office - Chief Negotiator (250) 356-8929

Ministry of Sustainable Resource Management, Coast and Marine Planning Branch, Victoria (250) 356-7723
Decision Support Services Branch (re: CRIMs) (250) 387-9580
Archaeology and Registry Services Branch (250) 952-4300

Land and Water British Columbia Inc.
Aquaculture Manager, Finfish Development Program (Nanaimo) (250) 741-5667
Water Licensing: (250) 741-5650 or http://lwbc.bc.ca/water/surface.html

Fisheries and Oceans Canada (DFO)
Aquaculture Officer (604) 666-7009
Habitat and Enhancement Branch (re: CEAA, stream surveys and other marine habitat concerns):

- Nanaimo: (250) 756-7291
- Vancouver: (604) 666-7471
- Shellfish Management Biologist: (250) 756-7233
- Red/Blue listed species and marine mammals: (250) 756-7291
- Habitat Biologist Contacts: http://www-heb.pac.dfo-mpo.gc.ca/directory/office_directory_e.htm

Canadian Coast Guard, Navigable Waters Protection Division: (604) 775-8867

[1] Current as of May 2003

Canadian Wildlife Service
Environmental Assessment Officer (604) 940-4685
Predator Species Information 1-819-997-1095

Escapes contacts
MAFF:
Manager of Aquaculture (250) 897-7561
Chief Aquaculture Inspector (250) 897-7575

DFO:
Aquaculture Officer (604) 666-7009
Atlantic Salmon Watch 1-800-811-6010

Spill reporting
All pollution, or threats of pollution in the Marine Environment must be reported.
The reporting number is **1-800-889-8852** or, contact any Canadian Coast Guard Marine Communications and Traffic Service (MCTS) at:

- Vancouver MCTS (604) 666-6011;
- Tofino MCTS (250) 726-7312;
- Prince Rupert MCTS (250) 627-3074;
- Comox MCTS (250) 339-3613; or,
- Marine Channel 16 VHF.

Internet links

BC OnLine
- www.bconline.gov.bc.ca

BC Parks
- Home Page: www.bcparks.com

BC Salmon Farmers Association (for information only)
- Homepage: www.salmonfarmers.org/
- Code of Practice: www.salmonfarmers.org/network/Code.htm

BC Stats
- Regional Districts Webpage: www.bcstats.gov.bc.ca/Regions/regDist.htm

BC Treaty Commission
- Homepage: www.bctreaty.net/
- First Nations listing: www.bctreaty.net/files/first_nations.html

Canadian Wildlife Service
- National Wildlife Recovery Plans: www.cws-scf.ec.gc.ca/es/recpllis_e.html

Department of Indian and Northern Affairs
- Homepage: www.inac.gc.ca/index_e.html
- Community Profiles: http://esd.inac.gc.ca/fnprofiles/fnprofiles_home.htm

Environment Canada
- Canadian Wildlife Service www.cws-scf.ec.gc.ca/cwshom_e.html
- Species at Risk: www.speciesatrisk.gc.ca/Species/English/
- National Wildlife Areas and Migratory Bird Sanctuaries: www.cws-scf.ec.gc.ca/hww-fap/nwambs/nwambs.html

Fisheries and Oceans Canada (DFO)
- DFP Pacific Home Page: www.pac.dfo-mpo.gc.ca/English/default.htm
- Habitat and Enhancement Branch: www-heb.pac.dfo-mpo.gc.ca/
- Habitat Biologist Contacts: www-heb.pac.dfo-mpo.gc.ca/english/directory/office_directory.htm
- Herring Spawn Areas of BC project: www-sci.pac.dfo-mpo.gc.ca/herspawn/herspawn/ project.htm
- Federal *Fisheries Act*: http://laws.justice.gc.ca/en/F-14/index.html
- Coast Guard Home Page: www.pacific.ccg-gcc.gc.ca/
- Navigable Waters Protection Division (including a link to the NWPA Guide): www.pacific.ccg-gcc.gc.ca/nwp/index.htm
- Addressing Environmental Cumulative Effects: www.ceaa.gc.ca/0011/0001/0008/guide1_e.htm
- Operational Policy Statement: "Addressing Cumulative Environmental Effects under CEAA: www.ceaa.gc.ca/0011/0002/cea_ops_e.htm
- Policy for the Management of Fish Habitat: www.dfo-mpo.gc.ca/habitat/Policy/english/chap5_e.htm

Land and Water British Columbia Inc.

- Homepage: http://lwbc.bc.ca/
- Aboriginal Interests Assessment Procedures: http://lwbc.bc.ca/for_first_nations/consultation/aboriginal_interest.htm
- Land Act: www.qp.gov.bc.ca/statreg/stat/L/96245_01.htm
- Applying for tenures: http://lwbc.bc.ca/applying_for_land/
- Water Licensing Homepage: http://lwbc.bc.ca/water/surface.html
- Water Licence Applications: http://lwbc.bc.ca/water/general/applying.html
- Water Act: www.qp.gov.bc.ca/statreg/stat/w/96483_01.htm

Maps BC

- Homepage: www.maps.bc.ca/, phone: (504) 888-4892

Ministry of Agriculture, Food and Fisheries

- Fisheries and Aquaculture Home Page: www.agf.gov.bc.ca/fisheries/index.htm
- Aquaculture Wizard: www.fishwizard.com/aqua/index.asp
- FISS and FPR information (Fish Info BC): www.bcfisheries.gov.bc.ca/fishinv/fishinfobc.html
- Fisheries Act (B.C.): www.qp.gov.bc.ca/statreg/stat/F/96149_01.htm
- Aquaculture Regulation: www.qp.gov.bc.ca/statreg/reg/F/Fisheries/364_89.htm

Ministry of Community, Aboriginal and Women's Services

- Local Government Directory: http://www.civicinfo.bc.ca/officials.pdf

Ministry of Forests

- Forest Practices Code Fish-stream Identification Guidebook: www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/fish/fishtoc.htm

Ministry of Sustainable Resource Management

- Home Page: www.gov.bc.ca/srm/
- Downloadable map of BC's protected areas: ftp://ftp.gis.luco.gov.bc.ca/pub/pas/parks/
- Land Resource Management Plans: www.luco.gov.bc.ca/lrmp/lrmpstat.htm
- Resource Management Division: www.luco.gov.bc.ca/
- Land and Registries Portal: http://srmwww.gov.bc.ca/sstu/portal
- Surveyor General Branch: http://srmwww.gov.bc.ca/sgb/
  riparian rights: http://srmwww.gov.bc.ca/sgb/services/riparian.html
- Archaeology and Registry Services Branch:
  Archaeology home page: http://srmwww.gov.bc.ca/arch/
  Heritage Conservation Act: www.qp.gov.bc.ca/statreg/stat/H/96187_01.htm
- Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: http://srmwww.gov.bc.ca/risc/pubs/aquatic/recon/ch4.htm
- R.I.C. Standards for Fish and Fish habitat Inventory (use Chapter 4): http://srmwww.gov.bc.ca/risc/pubs/aquatic/recon/index.htm

Ministry of Water Land and Air Protection (WLAP)

- Waste Management Act: www.qp.gov.bc.ca/statreg/stat/W/96482_01.htm
- Aquaculture Waste Control Regulation: www.qp.gov.bc.ca/statreg/reg/W/WasteMgmt/470_88.htm
- Summary of Environmental Standards and Guidelines for Fuel Handling, Transport and Storage: http://wlapwww.gov.bc.ca/epd/epdpa/industrial_waste/petrochemical/piw.html
- Wildlife Branch: http://wlapwww.gov.bc.ca/wld/

- Fish Protection Act: www.qp.gov.bc.ca/statreg/stat/F/97021_01.htm
- Conservation Data Centre (red/blue listed species) http://srmwww.gov.bc.ca/cdc/index.htm
- Aquaculture Opportunity Studies: www.agf.gov.bc.ca/fisheries/siting_reloc/aos.htm

Parks Canada
- Home Page: www.parkscanada.gc.ca
- Gwaii Haanas National Marine Conservation Area: http://www.parkscanada.gc.ca/pn-np/bc/gwaiihaanas/activ/activ1a_E.asp
- National Historic Sites: http://www.parkscanada.gc.ca/progs/lhn-nhs/index_E.asp
- National Parks & National Marine Conservation Areas: http://www.parkscanada.gc.ca/progs/amnc-nmca/index_E.asp
- National Parks in B.C.: http://www.parkscanada.gc.ca/pn-np/list_e.asp#bc
- National Parks website: http://www.parkscanada.gc.ca/progs/np-pn/index_E.asp

Statutes, Acts and Regulations
- Provincial: www.qp.gov.bc.ca/statreg/
- Federal: www.dfo-mpo.gc.ca/communic/policy/dnload_e.htm

Treaty Negotiations Office (Ministry of Attorney General)
- Homepage: www.gov.bc.ca/tno/
- Delgamuukw Consultation Guidelines: www.gov.bc.ca/tno/consult/
- Alphabetical list of all First Nations in B.C.: www.gov.bc.ca/tno/nations/.

Appendix B

The Finfish Aquaculture Siting and Approval Process

New applications

General description

Land and Water B.C. Inc. acts as the "one window" through which completed aquaculture applications for new sites are submitted. This process usually differs for applications to renew a tenure or licence. See "Amendments/tenure replacements" later in this appendix. Upon receipt of an application, LWBC distributes it to a number of government and non-government agencies. Each agency reviews the application in the context of that agency's specific area of concern. In some cases, agencies also assess the application for the regulatory approvals required under their mandates. The referral groups and agencies that review each application vary depending on the location and nature of the proposed site and facility.

Members of the public are given notice that an application has been submitted, and are provided with opportunities to comment on the proposed project. At the end of the review process, LWBC collates all feedback received by referral groups and the public. The application is then evaluated by the Statutory Decision Makers at MAFF and LWBC for approval of the licence and tenure. At the end of this evaluation, LWBC informs the applicant of whether or not the application has received provincial approval.

Federally, the DFO Major Projects Review Unit generally reviews all applications and any public comments received, in order to conduct a screening under the Canadian Environmental Assessment Act. DFO Coast Guard (Navigable Waters Protection Division) reviews for navigational concerns. Upon completion of these reviews, DFO will make a decision on whether or not to issue the required federal permit.

Further information on each agency's responsibilities is provided in the following pages.

Applicants are advised that the federal and provincial authorizations and decisions are made independent of each other and that the timing of these decisions may not always coincide. However, both orders of approvals are required before installation and operation of the facility may begin.

Referral agencies

After applications are submitted to LWBC, they are referred to a number of other agencies for review and input. DFO is the lead federal agency and, upon receipt of an application from LWBC, DFO begins the separate federal review of the application (details below). Depending on the location and nature of the application, local governments, interest groups and other agencies or organizations may also review an application.

Provincial review

LWBC determines which provincial agencies review each application, based on potential environmental and social concerns related to the proposed site and facility. A request may be made for further information from the applicant, generally coordinated through LWBC. Referral groups or agencies may contact an applicant

directly on matters that are of a time sensitive or specific technical nature, or that are related directly to a specific legislated mandate.

At the conclusion of the provincial referral process, a summary of referral responses is prepared by LWBC and is evaluated by the statutory decision-makers.

Federal review

DFO coordinates the federal review of applications for the required federal permits/authorisations. Contact this agency for details of the federal review process.

Public consultation

Overview

Consulting with the public on government activities is a policy of both provincial and federal governments and is an integral component of the review process for aquaculture projects. Consultation is also required under some of the acts governing the aquaculture industry. The Land Act and the Navigable Waters Protection Act both require that the public be given an opportunity to receive information and to comment on proposed development projects. Public consultation may include activities such as advertising the project in newspapers, holding open houses in nearby communities, and otherwise soliciting public comment on the project.

Advertising

Proponents are required to advertise an application for Crown land tenure on waterways in order to fulfil requirements of the provincial Land Act and the federal NWPA. In order to streamline the advertising procedure, the federal and provincial governments have developed a joint document that meets the requirements of both acts. The joint LWBC-DFO Advertising Form is available from either agency, and must be completed for all new aquaculture applications. An ad typically contains the following information:

- the full name of the applicant or company;
- a sketch of the site at a 1:20,000 scale;
- the address of the applicant's (or company's) office;
- the occupation of the applicant (e.g. "aquaculturist");
- the location of the tenure – both a general, geographic description and a surveyed description (metes and bounds);
- the purpose of the tenure, including the name and status of the work;
- the LWBC file number and DFO deposit number; and,
- a reference to the provincial Land Act and the federal NWPA in the text of the ad.

The applicant is responsible for ensuring the notice appears in the required publications. Under the joint advertising requirements, the advertisement must appear in two local newspapers for two consecutive weeks, and once in both the Canada Gazette and the British Columbia Gazette. The public may provide comments on the application to LWBC and DFO for 30 days following the publication date of the ad. Any public comments resulting from the advertisement will be retained by LWBC and DFO as a part of the public record for the application.

Open houses

An open house is typically held in one or more communities located near the proposed site. If more than one application is being made in the same area, one open house session may address more than one application. Members of the public are notified and invited to attend open houses in their community. Notice of the open house is usually posted in advance of the session in local newspapers, at First Nations Band Offices, at post offices and on local television channels. The applicant coordinates these activities, and assistance may be provided by LWBC and other government agencies.

The applicant generally makes a presentation on the proposed project at the open house which is chaired by LWBC and is attended by MAFF technical staff. The applicant's role is to provide information on the proposal and answer questions from attendees regarding the proposed site and facility. The applicant is responsible for displaying information such as location maps, photographs of the site and diagrams of the proposed facility, in addition to a completed application for the facility. Public participants are invited to make comments specific to the proposal(s) and to contribute local knowledge on resources and activities in the area. Public participants are also asked to complete site-specific questionnaires at the open house and to return these to LWBC following the session. Input received at open houses is considered by government in its review of applications.

Adjacent landowners

The province requires that the applicant obtain written consent from any adjacent upland owner whose riparian rights may be affected by the proposed fish farm. LWBC requires applicants to notify all adjacent landowners and tenure holders of the site proposal via a written notice. Nearby landowners may provide comments on the proposal to the applicant, the local government or to LWBC.

Deposit of plans

The Canadian Coast Guard requires that proponents deposit facility layout plans and location maps with the nearest Land Registry Office for public review.

Other methods

LWBC posts all applications for Crown land tenure on their website (http://www2.lwbc.bc.ca/ApplicationPosting/index.jsp_) and invites public comment. Persons wishing to provide additional comments may contact government staff directly. Non-government referral agencies may also be contacted by the public with specific concerns or questions regarding an application.

Consultation with First Nations

First Nations aquaculture referrals

Notification of proposed aquaculture projects is sent to First Nations jointly by DFO and LWBC. Either agency may subsequently consult with First Nations independently, based on their respective mandates and interests, and depending on the nature of the application.

Similar to the open house format described above, a separate open house is generally held with First Nations in order to obtain their input. This is also coordinated by the applicant.

LWBC acts as the lead agency for coordinating provincial First Nation consultations. These must meet the consultation requirements of both the Crown land tenure and the aquaculture licence and must follow the provincial First Nation consultation guidelines. For information on the consultation process, visit the BC Treaty Negotiations Office Web site.

Additional information on the provincial aboriginal referrals process for Crown land is available in the "First Nations' Interests" section of the LWBC Web site.

DFO is the lead federal agency for consultations with First Nations. Contact this agency for details about the federal consultation process.

Amendments/tenure replacements

General description

Information must be submitted to government if an aquaculture company is planning to make changes to an operation or if the Crown land tenure has expired. Either LWBC *or* MAFF may act as the lead agency, depending upon the nature of the proposed changes (refer to the Application Key in the Guide for details). In general, applications to renew or significantly alter a tenure are led by LWBC while production or facility amendments are led by MAFF. At the end of the review process, the lead agency informs the applicant of whether or not the application has been approved.

Contact DFO for information regarding federal review of renewal applications.

Referral agencies

Upon receipt of an amendment application, depending on the nature of the amendment, the lead agency (MAFF or LWBC) may refer the application to government agencies and may also refer to First Nations and interest groups for comment. Each agency reviews for its specific area of concern, and for any regulatory approvals required under its mandate. The referral groups and agencies that review applications vary depending on the type and nature of the proposed changes, and are determined by the lead agency.

The proponent may be contacted by the lead agency if further information is requested. At the conclusion of the referral period, all comments are compiled and reviewed by decision-makers.

Public and First Nations consultation

The lead agency may choose to conduct public and First Nations consultations for an amendment if public or First Nation interests may be affected. These consultations would follow the same process as for new applications (described above).

Fees

Pricing for Crown land programs consists of fees for administrative tasks associated with processing applications and managing tenure agreements, as well as rent charged for the use of Crown land or foreshore.

MSRM has responsibility for the setting of fees and rents, which are administered by LWBC. Pricing is based on the Cabinet-approved principles of cost recovery, fair return, equity, efficiency, predictability and

competitiveness. Changes to fees and rental methodologies generally require Cabinet approval. It is common practice to consult with affected client groups as part of a pricing review.

Application, processing and other administrative fees are required by the Land Act and provincial Fisheries Act fee schedules. The following fees apply to finfish aquaculture and do not include GST (current as of May 2003):

Application fees

- New tenure applications: $100 non-refundable application fee for each lease, licence or permit requested.
- New aquaculture licence applications: $25.
- Replacement tenures: $50 application fee.

Processing fees

- **Tenure**: Where an application is successfully adjudicated and proceeds to an offer of a tenure, a $150 processing fee is payable for each new or replacement lease or licence issued. An investigative permit requires payment of a $50 processing fee.
- **Aquaculture Licence**: A $100 or $200 fee is required for new or replacement aquaculture licences with a production value of less than $7,500. This fee is $200 for Bone fide production values of $7,500 or greater.
- **Amendments** to an aquaculture licence are charged $50.
- **Annual Rent** (LWBC): see a) through c) below.

  a) Investigative permit

  The annual rental for an investigative permit is $250/year or a prepaid rental of $500 for the entire term of two years.

  b) Licence

  A licence of occupation, valid for five years, will be offered for first-time approvals. Thereafter, replacement licences, valid for up to 20 years, may be offered at the discretion of LWBC. This form of tenure confers on a licensee the right to enter upon and use the property for a specific purpose without the benefit of exclusive use. A licence does not require the land to be surveyed.
  - Intensive areas – annual rent is calculated as 7.5% of the Zone Value, with a $500 minimum payment per tenure. Licence fees in BC vary from $**324**/ha to $**527**/ha.
  - Extensive areas – annual rent is 7.5% of one half the Zone Value. (A 50% reduction of the zone value is to be used for extensive areas such as those occupied by anchor sites.)
  - The land value is calculated as the tenure area multiplied by the zone value. Where the aquaculture tenure occupies more than one pricing zone, the higher zone value applies. Contact LWBC for information on zone values.

  c) Lease

  A lease is issued where substantial improvements are proposed. This form of land tenure grants an exclusive right to use the land for a specified term and requires the site to be surveyed. The usual term for a lease is 30 years.
  - Intensive areas – annual rent is calculated as 8% of the Zone Value, with a $500 minimum payment per tenure. Lease fees in BC vary from $**346**/ha to $**563**/ha.
  - Extensive areas – annual rent is 8% of one half the Zone Value. (A 50% reduction of the zone value is to be used for extensive areas such as anchor sites.)

Roles and responsibilities

Provincial

Ministry of Agriculture Food and Fisheries (MAFF)

MAFF's mandate is to foster a competitive, economically viable and environmentally responsible agriculture and food system throughout British Columbia. MAFF is the lead agency for aquaculture in British Columbia.

Aquaculture licences are issued and administered by MAFF under the provincial Fisheries Act. Other responsibilities of MAFF with regard to aquaculture include:

- ensuring compliance with site management plans;
- collection of facility reporting data;
- establishing standards relative to design, construction materials and layout of aquaculture facilities; and,
- field inspection of existing and proposed sites.

MAFF's aquaculture inspectors ensure compliance with the provincial Fisheries Act, the Aquaculture Regulations and the terms and conditions of an aquaculture licence. The inspectors generate compliance reports through regular site inspections and other monitoring activities. Some of these activities may be undertaken jointly with staff from LWBC and/or MWLAP.

Aquaculture licences are renewed on an annual basis. This is usually a simple process requiring the completion and submission of a licence renewal to MAFF. Licence renewal does not normally require re-submission of all components of an application. If changes are proposed to the species or production levels of the facility, however, more information may be required. Applicants should contact MAFF for more information.

The MAFF licensing policy is available on the MAFF Web site.

MAFF is responsible for the following legislation.

Fisheries Act (BC)

The British Columbia Fisheries Act provides for licensing and regulatory control of activities associated with commercial fisheries and aquaculture operations. The primary concerns are the licensing of fish processing plants, fish buying establishments, fishers selling their own catch, wild oyster and marine plant harvesting and aquaculture operations with the province of British Columbia. MAFF is responsible for licensing under this act.

Aquaculture Regulation

Administered under the Fisheries Act (BC), this regulation establishes the requirements for holding an aquaculture licence, dealing in fish, handling a fish escape, administering drugs, transporting fish and licensing fees.

Farm Practices (Right to Farm) Act

Provides a number of measures to protect farming in BC. If the requirements of the act are followed on a farm operation, a farmer cannot be sued in nuisance for any odour, noise, dust or other disturbance resulting from normal farm practices and a farmer cannot by injunction or other court order be prevented from carrying on normal farming practices. Farm operations include aquaculture as defined in the provincial Fisheries Act, when carried on by a party licensed under that act.

Land and Water BC Inc. (LWBC)

Land and Water British Columbia Inc. (LWBC) is responsible for the leasing and sale of aquatic and upland Crown land and for water licensing and allocation for domestic and industria' use.

A Crown land tenure must be issued by LWBC under the Land Act in order to locate a marine aquaculture operation on Crown land in British Columbia. LWBC is responsible for the following activities regarding aquaculture applications:

- receiving applications and ensuring completeness;
- referring, collecting and reviewing responses regarding applications;
- water allocation and licensing; and,
- delivery of tenure approvals and all other necessary documents to a successful applicant, including approvals administered by other agencies.

LWBC also oversees compliance with the requirements of the Land Act, including ensuring that applications are publicly advertised and that consultations with the public and First Nations take place as part of the assessment process.

LWBC is responsible for the following legislation:

Land Act

This act authorises uses for provincial Crown land and is administered by LWBC. This agency may grant Crown land tenures under this act, which gives tenure-holders the exclusive right to use a parcel of Crown land for a specific purpose (such as aquaculture). A lease has a 30 year maximum term.

Water Act

This act is the chief provincial law controlling the use of fresh water in British Columbia. Its focus is on regulating the quantities of water through a licensing system. The Water Management Branch of LWBC oversees approvals to permit changes to natural watercourses and licences for the diversion, storage and use of water. If an aquaculture facility requires fresh water that is drawn from a surface source, the operator must obtain a licence under this act.

Ministry of Sustainable Resource Management (MSRM)

The Ministry of Sustainable Resource Management was established to provide leadership in economically, socially and environmentally sustainable development through integrated coastal and land use planning and resource information management.

MSRM staff review aquaculture applications and provide referral responses to LWBC. Their responsibilities in regards to aquaculture are:

- integrated and issue-specific land use and coastal planning at large and small scales;
- archaeological preservation;
- tourism development planning; and,
- coastal resource inventory mapping and information management (e.g. producing resource buffer maps using aquaculture siting criteria).

MSRM is responsible for administering the following legislation:

Heritage Conservation Act

This act stipulates that a person must not damage, desecrate or alter a Provincial Heritage Site or a Provincial Heritage Object. Heritage Object and Heritage Site are defined in the Act as personal property or land, including land covered by water, that has heritage value to British Columbia, a community or an aboriginal people, whether designated or not. Heritage value means historical, cultural, aesthetic, scientific or educational worth or usefulness.

Ministry of Water, Land and Air Protection (MWLAP)

The mandate of the Ministry of Water, Land and Air Protection is to protect and conserve natural resources, maintain and restore the quality of land, water and air, and manage water resources. The ministry also helps to provide a safer environment by minimizing environmental hazards. The ministry supports the sustainable use of resources and environmentally sensitive economic development. It also ensures the government receives a fair return for the use of public resources.

MWLAP staff review applications and provide referral responses to LWBC regarding local resources and potential impacts that may result from the siting or operation of the aquaculture facility. MWLAP has regulatory authority for the following matters with respect to aquaculture facilities:

- waste management under the Finfish Aquaculture Waste Control Regulation;
- waste management permits/approvals;
- pesticide permits/plans; and,
- Wildlife Act permits where required.

MWLAP conservation officers oversee compliance with the requirements of the Waste Management Act, and the Wildlife Act and have delegated authority under the Fisheries Act (BC).

MWLAP is the agency responsible for the following legislation:

Waste Management Act

The Waste Management Act regulates the treatment and disposal of wastes into the environment. This act prohibits the introduction of waste into the environment, unless in compliance with a valid waste management permit. The Finfish Aquaculture Waste Control Regulation under this act may enable an exemption from obtaining such a permit for aquaculture facilities that meet certain requirements. See the MWLAP Aquaculture Web page for details. Other key regulations under this act also apply to aquaculture, including the Special Waste Regulation.

The **Finfish Aquaculture Waste Control Regulation** came into effect September 12, 2002. This regulation is "performance-based" in that it establishes legislated levels for specific chemical and biological indicators that must be met, rather than controlling a farm's production levels or feed usage, as in the previous version of this regulation. A sediment chemical standard must be met within the farm tenure and a biological standard at the perimeter of the tenure. Farms exceeding these levels will be required to implement mitigation measures. The regulation will be reviewed within three to five years.

Wildlife Act

The Wildlife Act defines which animals are "wildlife" within the Province of British Columbia. Animals such as eagles, herons, hawks, minks, river otters and bears are designated as wildlife. MWLAP reviews applications to determine potential impacts upon wildlife populations due to the siting of aquaculture facilities. The Regional Fish and Wildlife Manager is the statutory decision-maker for the issuance of predator control permits for mink, marten, otter and bears.

Federal

Fisheries and Oceans Canada (DFO)

DFO is responsible for the federal review of aquaculture applications. In this function, DFO will consider its mandates to:

- manage and protect the fisheries resource;
- manage and protect the marine and freshwater environment;
- maintain marine safety; and,
- facilitate maritime trade, commerce and ocean development.

Aquaculture applications are reviewed generally by four branches within DFO: Canadian Coast Guard, Habitat and Enhancement Branch, Fisheries Management Branch, and Science Branch.

DFO is the agency responsible for administering the following legislation.

Fisheries Act (Canada)

Under the federal Fisheries Act, DFO has a legal obligation to protect fish and fish habitat. The federal Fisheries Act defines fish as including all the life stages of fish shellfish, crustaceans, and marine animals. It defines fish habitat as freshwater, estuarine and marine environments on which fish depend, directly or indirectly, in order to carry out their life processes such as spawning grounds and areas used for rearing, feeding and migration.

DFO's "Policy for the Management of Fish Habitat (1986)" guides implementation of the habitat provisions of the federal Fisheries Act. Refer to this policy at: http://www.dfo-mpo.gc.ca/canwaters-eauxcan/infocentre/legislation-lois/policies/fhm-policy/index_e.asp.

Navigable Waters Protection Act

The primary purpose of this act is protection of the public right of navigation. Any work undertaken in a navigable waterway must receive Canadian Coast Guard approval prior to its construction. "Navigable waters" includes any body of water capable, in its natural state, of being navigated by floating vessels of any

description for the purpose of transportation, recreation or commerce. It also includes a canal and any other body of water created or altered for public use, as well as any waterway where the public right of navigation exists by dedication of the waterway for public purposes, or by the public having acquired the right to navigate through long use. DFO's Navigable Waters Protection Division Web site provides additional information, including information on applying for approvals under this act.

Canadian Environmental Assessment Act (CEAA)

This act sets out responsibilities and procedures for the federal environmental assessment of projects. For finfish aquaculture, CEAA is usually triggered by the requirement for DFO to issue an NWPA permit. An authorization under Section 35(2) of the federal Fisheries Act (regarding the potential for harmful alteration, disruption or destruction of fish habitat) would also trigger CEAA; however, if both triggers are activated, a single screening is conducted.

See the federal Consolidated Statutes and Regulations web site (www.dfo-mpo.gc.ca/communic/policy/dnload_e.htm) to view any federal act or regulation. Contact DFO for further information on any of the above legislation and on the current federal policy for reviewing aquaculture applications.

Local government

Local governments (regional districts and municipalities) have three basic roles in British Columbia:

- providing services to regional residents and communities;
- providing a political and administrative framework for local and intergovernmental representation; and,
- performing community planning and land use regulation.

Local governments review aquaculture applications and provide comments in relation to their land use plans.

As part of its land use planning process, a local government may control zoning within its jurisdiction. Applicants are required to contact the local government to determine whether a zoning or farm bylaw exists at the site and, if so, whether this allows for aquaculture development. A rezoning application from the local government may be required. Local governments' farm bylaws and zoning, that affects farm areas, are subject to review under the Local Government Act by MAFF.

Local Government Act

Under this act, local governments may state, in their official community plans, broad objectives, policies and guidelines respecting present and proposed land uses and development. These may be implemented using zoning bylaws, permits and other instruments. Regional districts and the Islands Trust also may use rural land use bylaws for planning and regulation of land, including the surface of the water. The power to regulate includes the power to prohibit any use(s) in any zone(s).